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Reconstruction Analysis

Bordeaux Chateau



RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
(VALUE JANUARY 2023)



Estimated Reconstruction Costs

JANUARY 2023

Subject of this study and brief description of the original building

This study estimates the costs of reconstructing a stone building dismantled 33 years ago.

The building is a neoclassical chateau dating from the 19th century from the Bordeaux region.

It is stone masonry construction with a main body of 3 levels: basement, ground floor, and upper floor with two lateral extensions of two levels (basement and ground floor).

The building was covered with roof terraces, accessible to the first floor.

The facades have large openings with one pediment on what was originally the South facade and another pediment on the North.

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
(VALUE JANUARY 2023)

Estimated Reconstruction Costs

JANUARY 2023

Basis of the estimate

This estimate is based on the plans for reconstruction with the numbered and audited stones in the warehouse. It is also based on the structural feasibility study carried out by Studio Cèdre engineering dated November 30, 2021.

Construction costs are based on European prices (value January 2023).

Total cost in Summary and Conclusion is estimated in USD.

Limits of the estimate

The estimate mainly focuses on the concrete and metallic structure, the reassembly of the stone, the fire stability of the metallic structure, the insulation of the walls, and the waterproofing of the terraces. What is not covered in this estimate: the earthworks, the technical requirements specific to the site location, and the variations in costs because of the different companies that will carry out the work.

Presentation of the estimate

This estimate is composed of 7 parts:

1. Concrete Structure
2. Metal Structure
3. Fire Stability of the Metal Structure and Wall Insulation
4. Reassembly of the Stones
5. Roof Terraces
6. Doors and Windows
7. Summary and Conclusion

RECONSTRUCTION OF THE CHATEAU
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Concrete Structure

The concrete structure concerns the following parts of the building:

- Foundations
- Slab of the lower floor of the basement
- Walls of the basement below ground level
- Columns of the basement
- High floor of the basement
- High grand floor and the high second floor.
- Slab of the exterior staircases

The earthworks are not included because we don't know where the building will be rebuilt.

For the same reason, we made the following assumptions for the soil type: soft soil with the bearing capacity of a 1 bar (*according the Studio Cèdre study*); Water table level lower than low basement floor.

Plans for the concrete structure (01b) are on pages 5 through 16.



RECONSTRUCTION OF THE CHATEAU - 01b
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

BORDEAUX CHATEAU

Reconstruction on metal structure

Detailed location of the concrete structure based on the plans of Studio Cedre -
 January 2023 - DMB Construction durable

Feasibility study



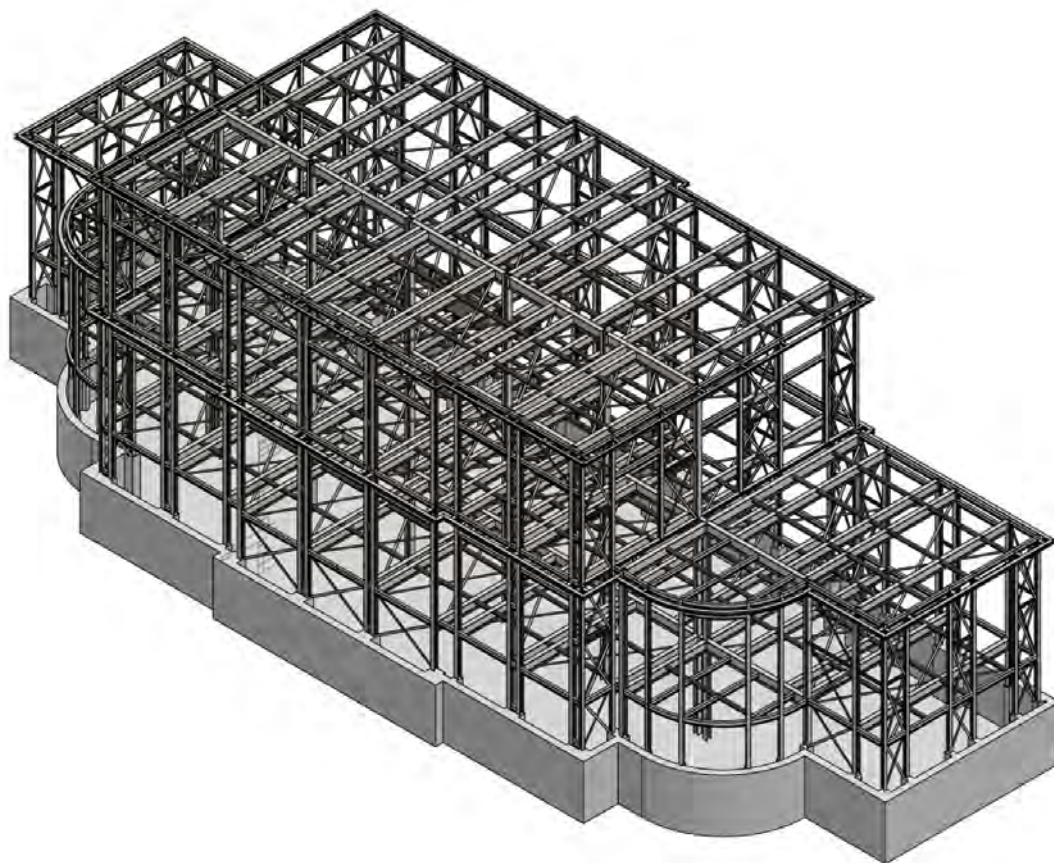
SOUTH FAÇADE



NORTH FAÇADE

Studio Cèdre Bureau d'étude Structure et Conception contact@studiocedre.fr 06 89 44 77 33	<i>Maitre d'ouvrage:</i>	<i>Maitre d'oeuvre:</i>	<i>Entreprise:</i>	Bordeaux Chateau	Phase	SC_REBC_PLN	00
	Alisanne Wonderland 49 rue de Seine 75006 Paris			Metal structure		A3	Scale:
				Plan book	FAISA		

RECONSTRUCTION OF THE CHATEAU - 01b
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
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Maitre d'ouvrage:
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Maitre d'oeuvre:

Entreprise:

Bordeaux Chateau
Metal structure

Perspective

Phase	SC_REBC_PLN	1
	A3	Ech :1/125
FAISA		

RECONSTRUCTION OF THE CHATEAU - 01b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

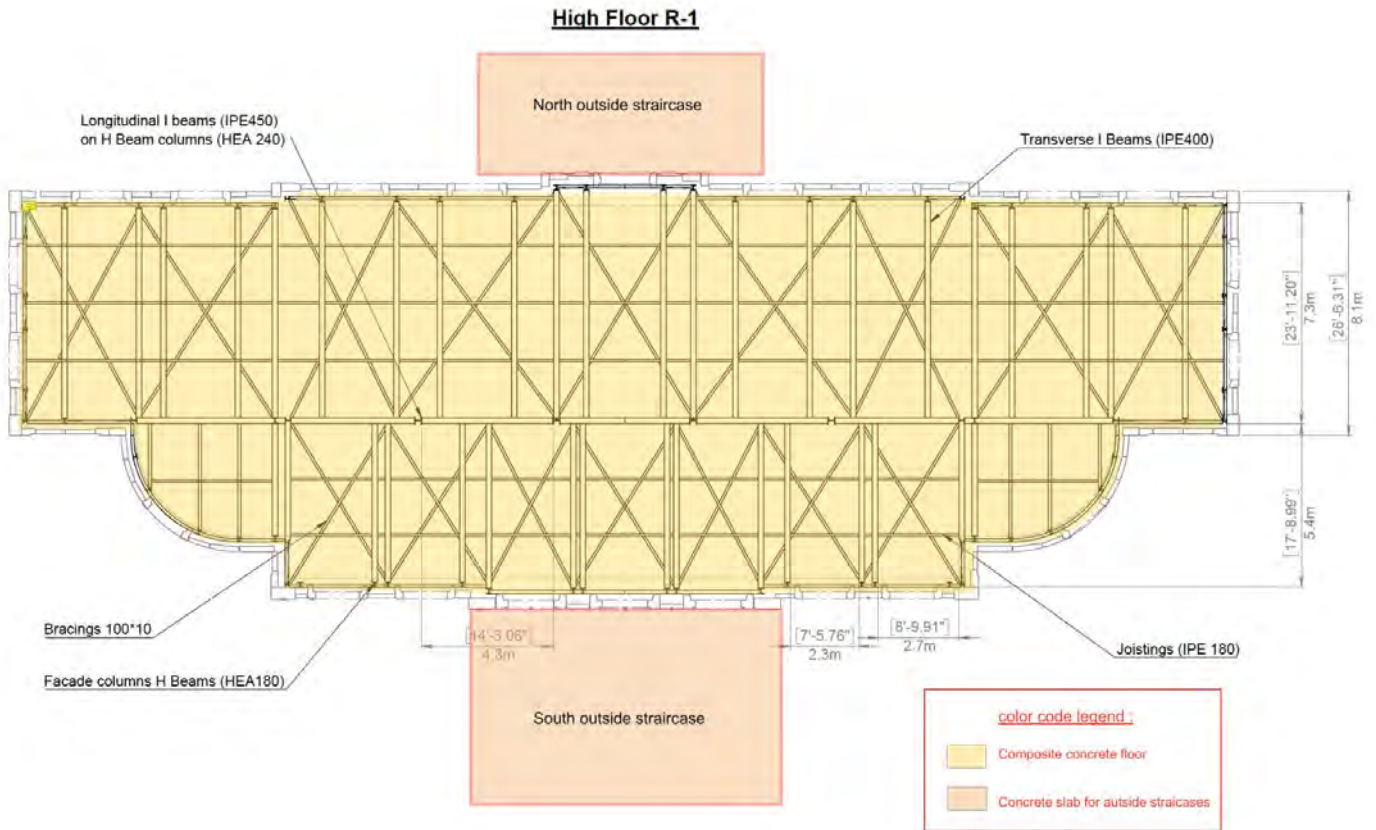


Peripheral entrenched structure: concrete walls and columns
central metal columns on concrete footings

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				Low Floor R-1	A3 Ech :1/125 FAISA

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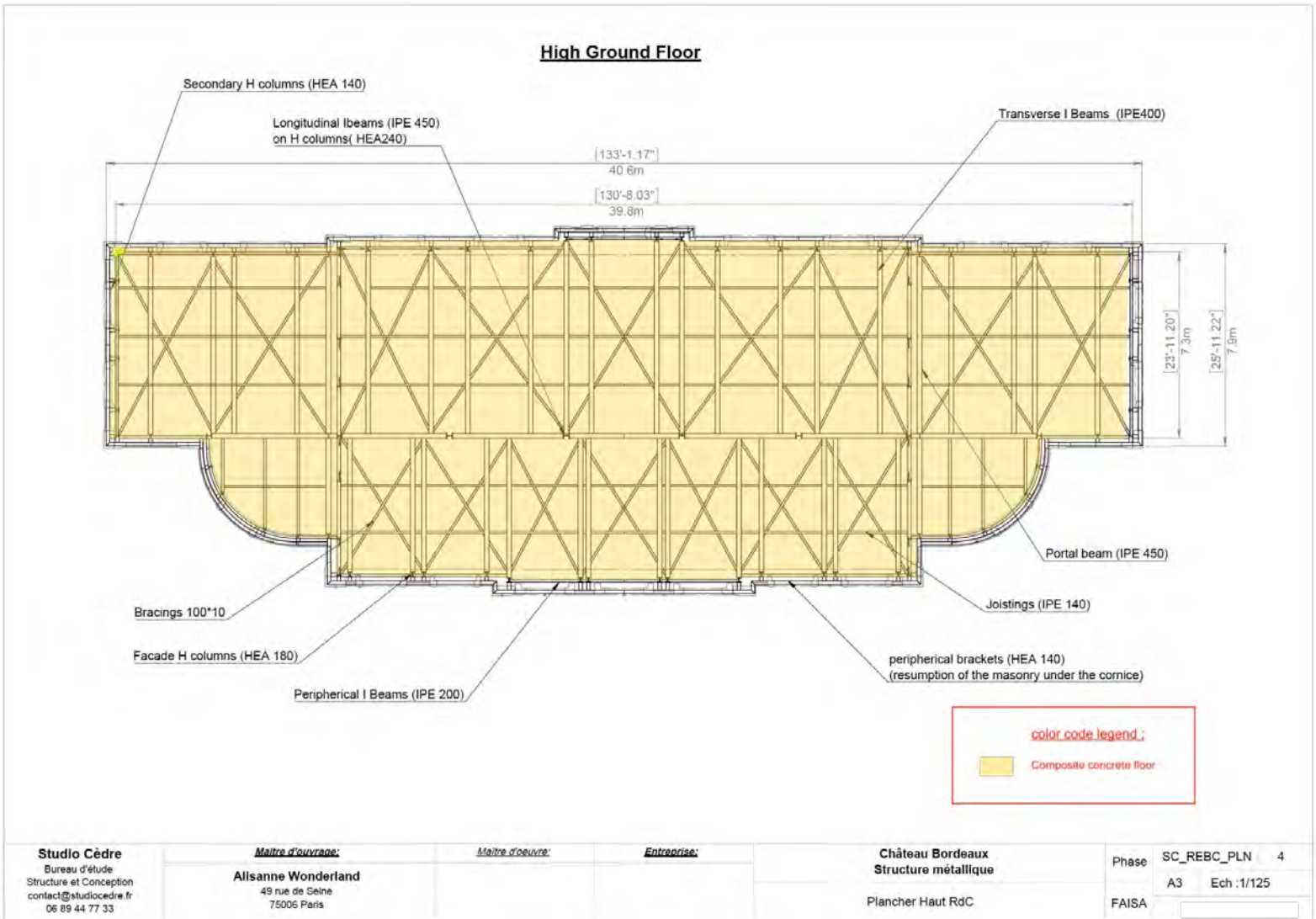


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				Plancher Bas R-1	FAISA	A3	Ech : 1/125

RECONSTRUCTION OF THE CHATEAU - 01b

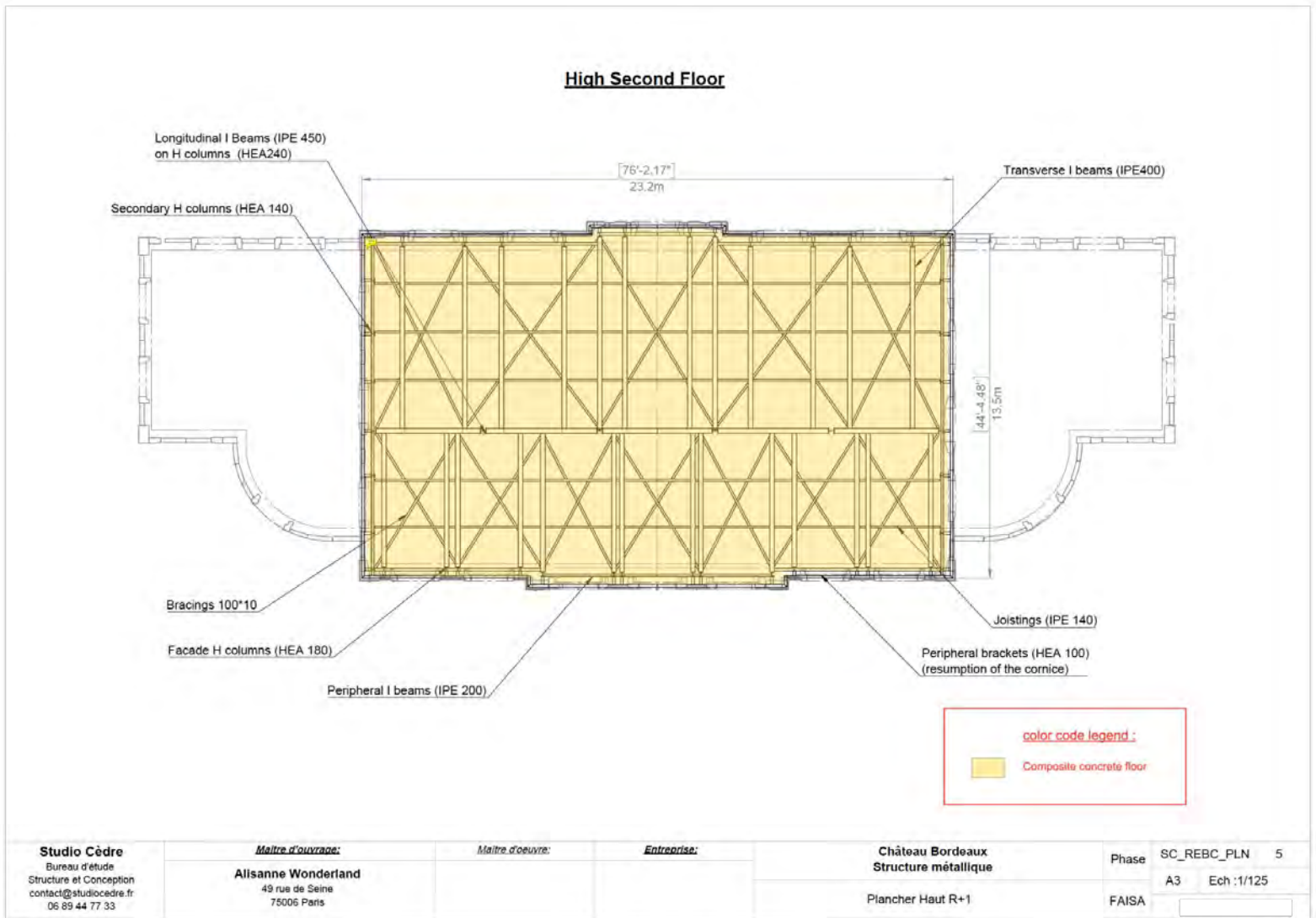
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EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

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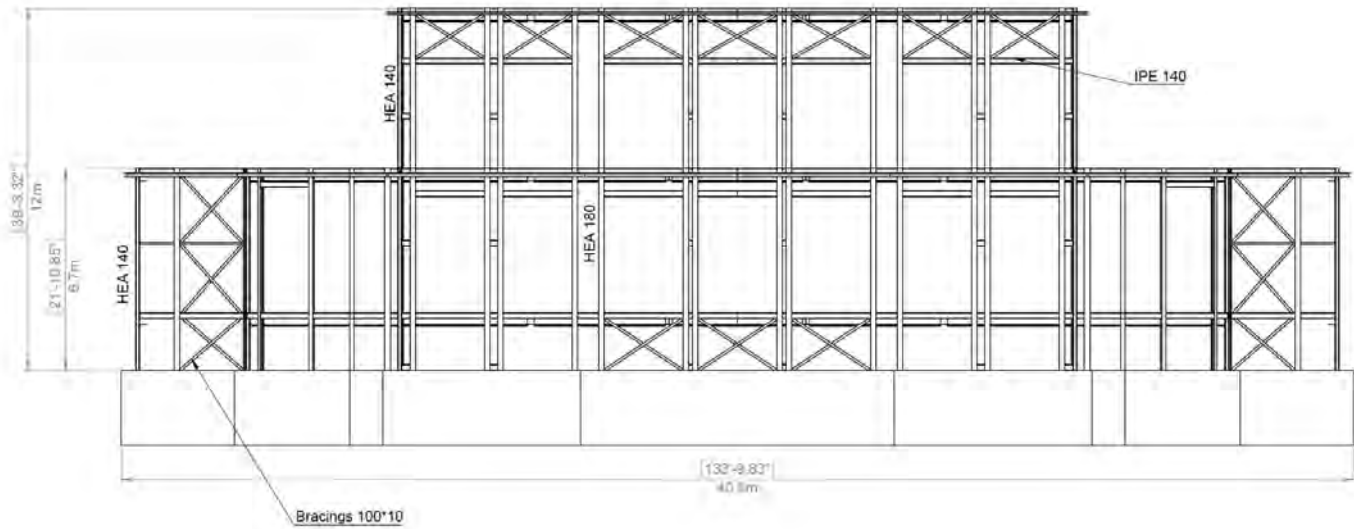


RECONSTRUCTION OF THE CHATEAU - 01b

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South Facade



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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique
Vue Façade Sud

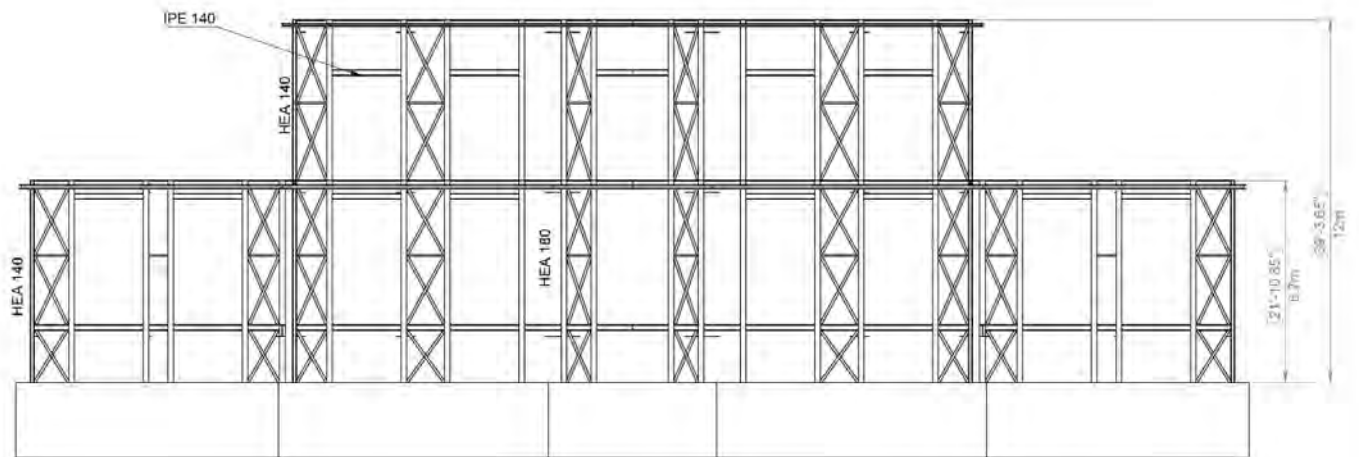
Phase SC_REBC_PLN 6
A3 Ech : 1/125
FAISA

RECONSTRUCTION OF THE CHATEAU - 01b

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North Facade



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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Vue Façade Nord

Phase

SC_REBC_PLN 7

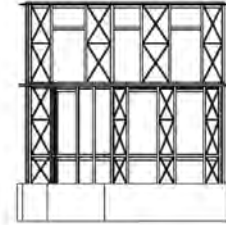
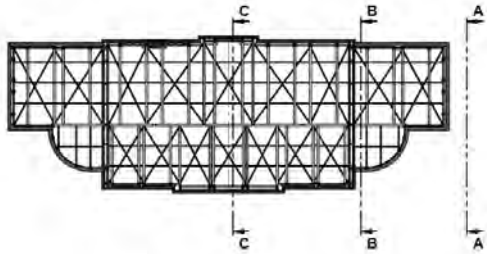
A3

Ech : 1/125

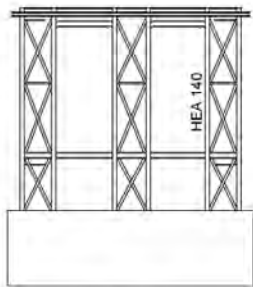
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EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

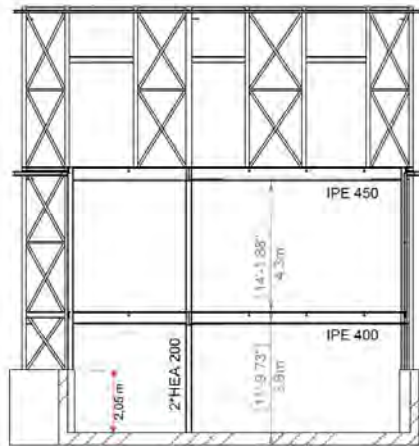
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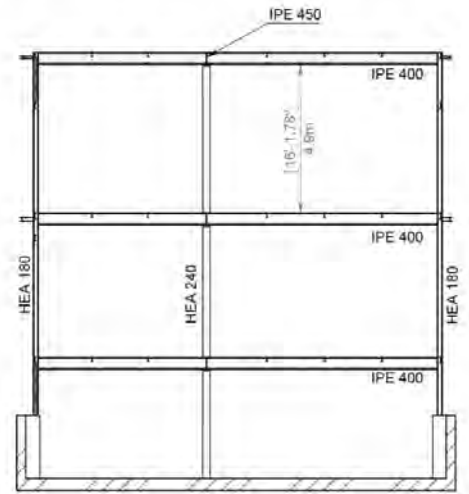
Side view



Section A-A



Section B-B



Section C-C

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Maitre d'œuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupes transversales

Phase SC_REBC_PLN 8

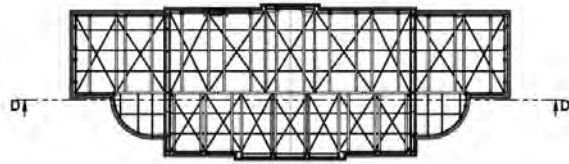
A3 Ech 1/125

FAISA

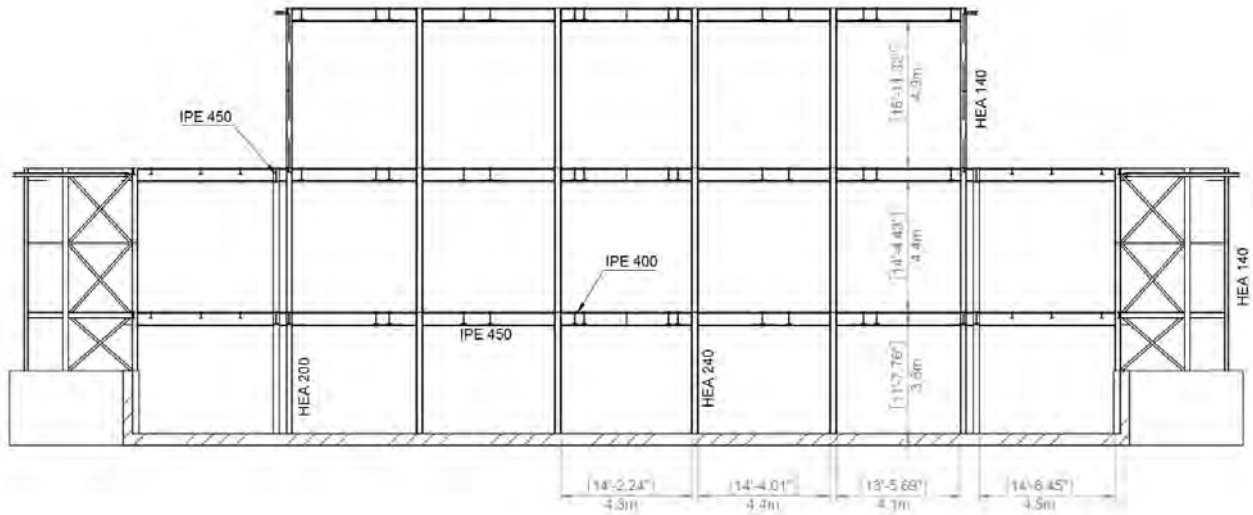
RECONSTRUCTION OF THE CHATEAU - 01b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)



Longitudinal Section



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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupe longitudinale

Phase SC_REBC_PLN 9

A3 Ech :1/125

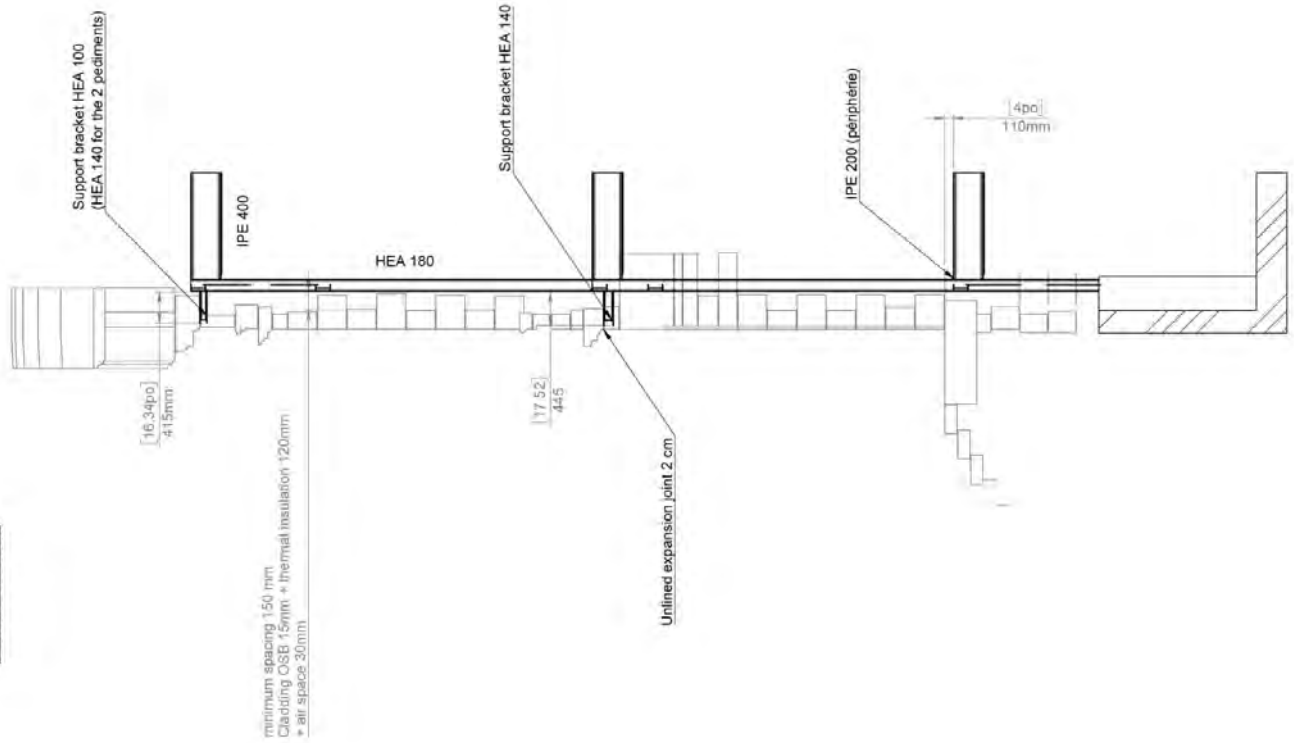
FA/SA

RECONSTRUCTION OF THE CHATEAU - 01b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section

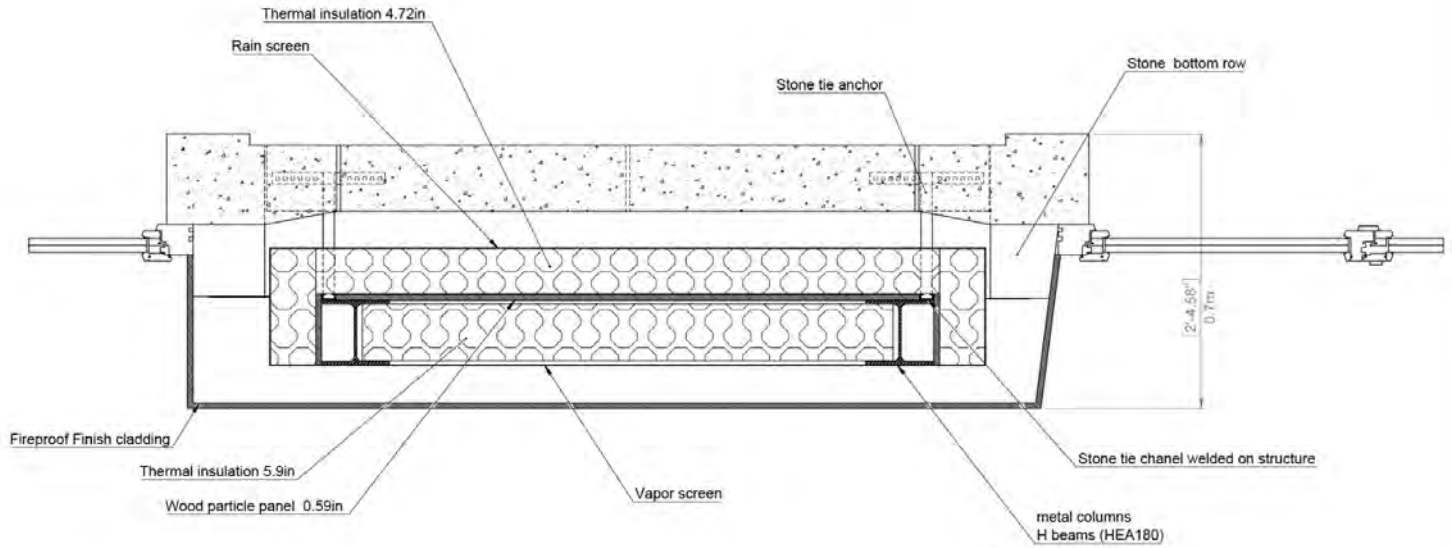


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				Coupe détail façade	A3 Ech :1/50 FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

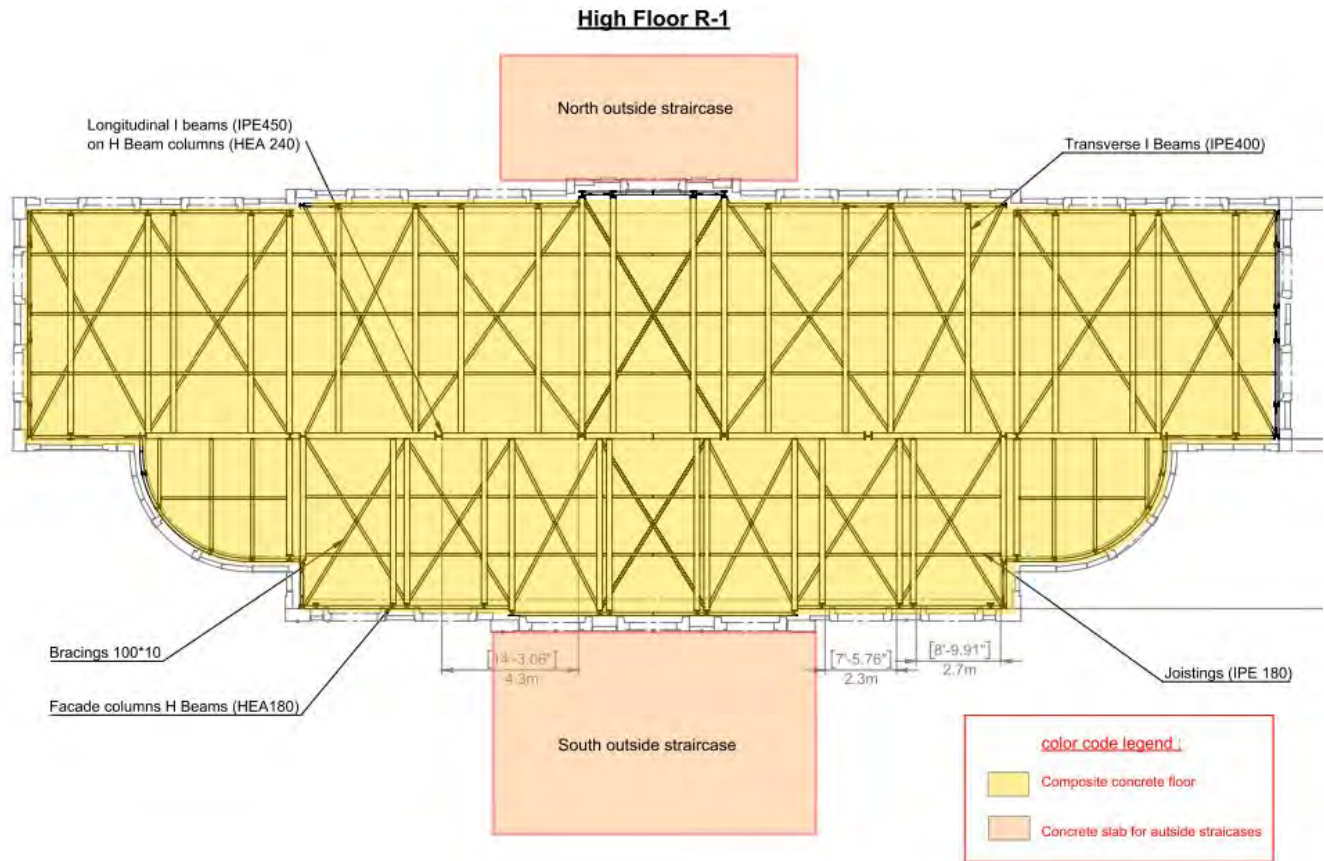
(VALUE JANUARY 2023)

Facade Section



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	[Empty cells for additional project information]					

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
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The cost estimate for the concrete structure is:
 310 000 € (excluding tax).

Spreadsheets with calculations are on pages
 18 and 19.

1 - Foundations	€
Foundation block of columns	14 250,00
Foundation concrete wall	16 950,00
Total cost foundation (without earthworks)	31 200,00
2 - Basement	€
concrete columns	29 920,00
concrete wall	43 460,00
Total estimate basement	73 380,00
3 - Floors	€
Concrete floor on solid ground	46 770,00
Composite concrete floor	147 684,00
Total estimate floors	194 454,00
4 - Outside staircases	€
Concrete slab	10 400,00
Total estimate floors	10 400,00
Total estimate concrete structures (excluding tax)	309 434,00
rounded value (€)	310 000,00

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - concrete structure - Detail of calculation by type of element - January 2023								
Basis of calculation : Plans file Studio Cèdre dated 30/11/2021								
Foundations								
Foundation block of columns	section	height	volume	number	total concrete volume by block	total volume all concrete block	rounded value concrete	Steel on the basis of 40 kg/m3
	cm	cm	m3	u	m3	m3	m3	Kg
P1	90 x 90	40	0.324	8	2.592	28.53	28.50	1140
P2	90 x 100	40	0.360	14	5.040			
P3	100 x 100	40	0.400	18	7.200			
P4	120 x 100	40	0.480	4	1.920			
P5	130 x 100	40	0.520	6	3.120			
P6	140 x 100	40	0.560	2	1.120			
P7	170 x 100	40	0.680	2	1.360			
P8	210 x 100	40	0.840	2	1.680			
P9	150 x 150	40	0.900	5	4.500			
Foundation concrete wall	section	length	total volume foundation concrete block	rounded value concrete	Steel on the basis of 40 kg/m3			
	cm	m	m3	m3	Kg			
	80 x 40	106	33.92	33.9	1356			
Basement								
Concrete columns	section	height	volume	number	total concrete volume by column	total volume all concrete columns	rounded value	Steel on the basis of 80 kg/m3
	cm	cm	m3	u	m3	m3	m3	kg
P1	30 x 30	205	0.185	8	1.476	21.81	21.80	1744
P2	30 x 40	205	0.246	14	3.444			
P3	40 x 40	205	0.328	18	5.904			
P4	60 x 40	205	0.492	4	1.968			
P5	70 x 40	205	0.574	6	3.444			
P6	80 x 40	205	0.656	2	1.312			
P7	110 x 40	205	0.902	2	1.804			
P8	150 x 40	205	1.230	2	2.460			
Concrete wall	length	height	total area					
	m	m	m ²					
	106	2.05	217.30					
Floors				Outside staircases				
	total area	total area		Concrete slab				
Concrete floor on solid ground	m ²	m ²		m ²				
low basement floor	467.70					detail	result	
Composite concrete floor						South strair	6,5*10,3	66.95
height floor R-1	461.50					North stair	9,55*3,85	36.77
height ground floor	461.50	1,230.70				total area		#REF!
height second floor	307.70					rounded value		104.00

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - concrete structure - Estimate cost of the concrete structures - January 2023						
Basis of calculation : Plans file Studio Cèdre dated 30/11/2021						
	m ²	m ³	kg	€	€	€
1 - Foundations						
Foundation block of columns						
Concrete		28.50		400	11,400.00	14,250.00
Steel reinforcement			1,140.00	2.5	2,850.00	
Foundation concrete wall						
Concrete		33.90		400	13,560.00	16,950.00
Steel reinforcement			1,356.00	2.5	3,390.00	
Total cost foundation (without earthworks)						31,200.00
2 - Basement						
concrete columns						
Concrete		21.30		1,200.00	25,560.00	29,920.00
Steel reinforcement			1744	2.5	4,360.00	
Formwork	Include					
concrete wall	217.30			200		43,460.00
Concrete			Include			
Steel reinforcement	Include					
Formwork						
Total estimate basement						73,380.00
3 - Floors						
Concrete floor on solid ground						
Concrete	467.70			100.00		46,770.00
Steel reinforcement			Include			
Formwork	Include					
Composite concrete floor						
Concrete	1,230.70			120.00		147,684.00
Steel reinforcement			Include			
Formwork	Include					
Total estimate floors						194,454.00
4 - Outside staircases						
Concrete slab						
Concrete	104.00			100.00		10,400.00
Steel reinforcement			Include			
Formwork	Include					
Total estimate floors						10,400.00
Total estimate concrete structures (excluding tax)						309,434.00
rounded value (€)						310,000.00

RECONSTRUCTION OF THE CHATEAU

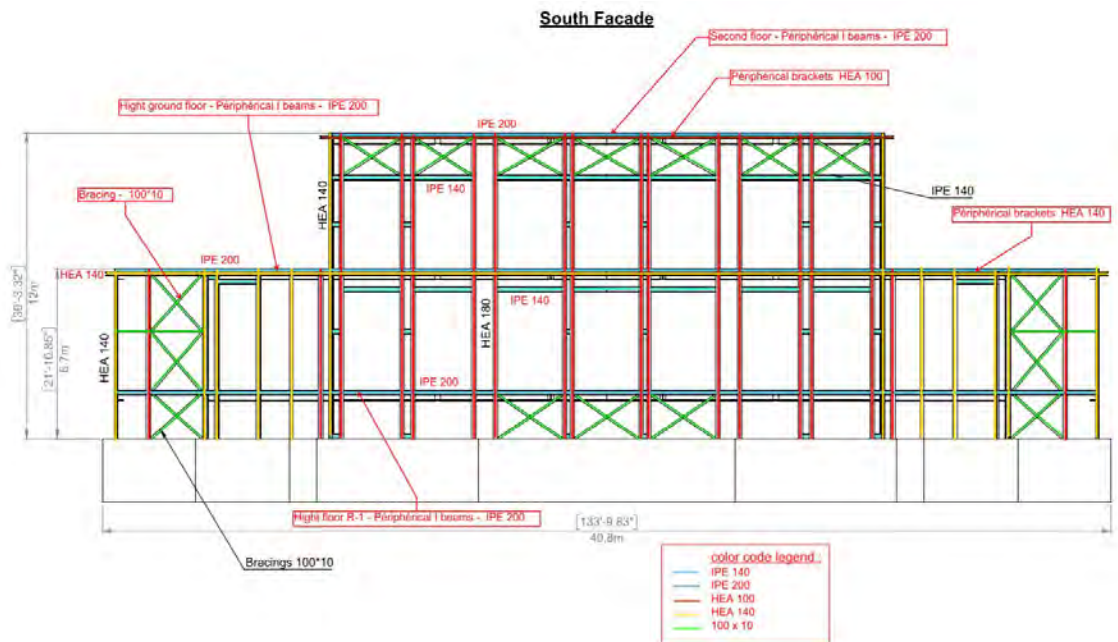
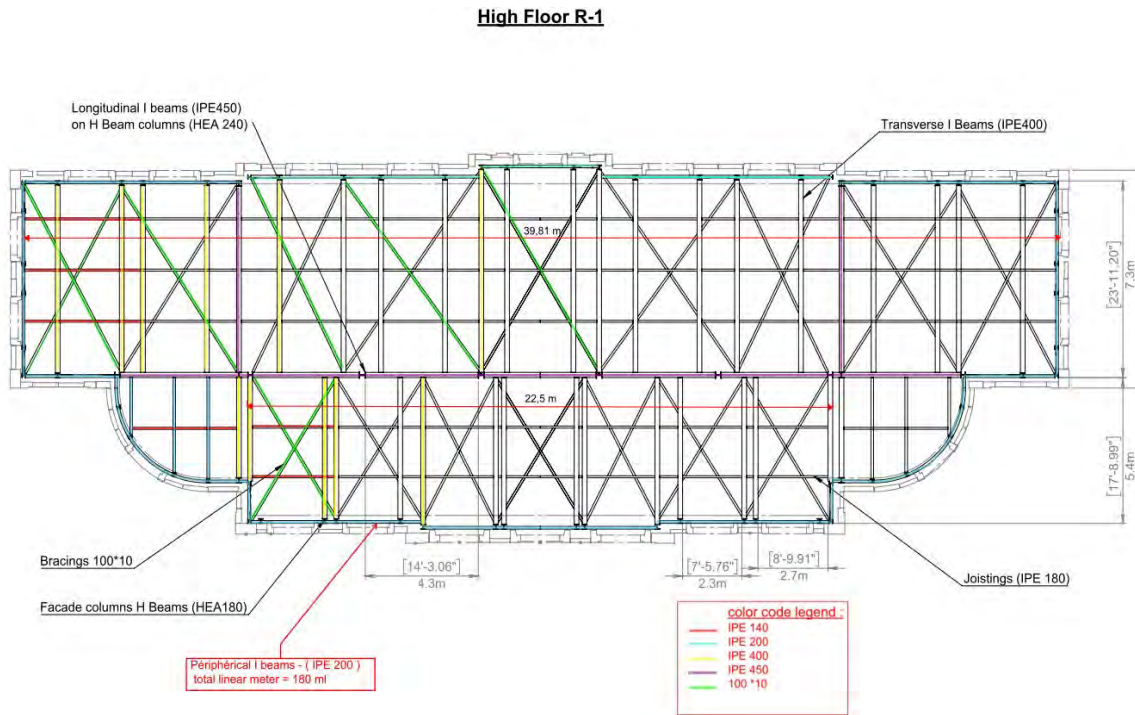
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Metal Structures

A primary steel structure is necessary to 1. stiffen the stone façade and 2. support the weight of the concrete floors. A secondary structure connects the stones to the primary structure. The primary steel structure was calculated by Studio Cèdre engineering. Our estimate is based on his study. That structure is composed of steel profiles of different sizes. Every profile has been located according to the color code.

Plans for the metal structures (02b) are on pages 21 through 32.



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BORDEAUX CHATEAU

Reconstruction on metal structure

Detailed location of the metal structure based on the plans of Studio Cedre -
January 2023 - DMB Construction durable

Feasibility study



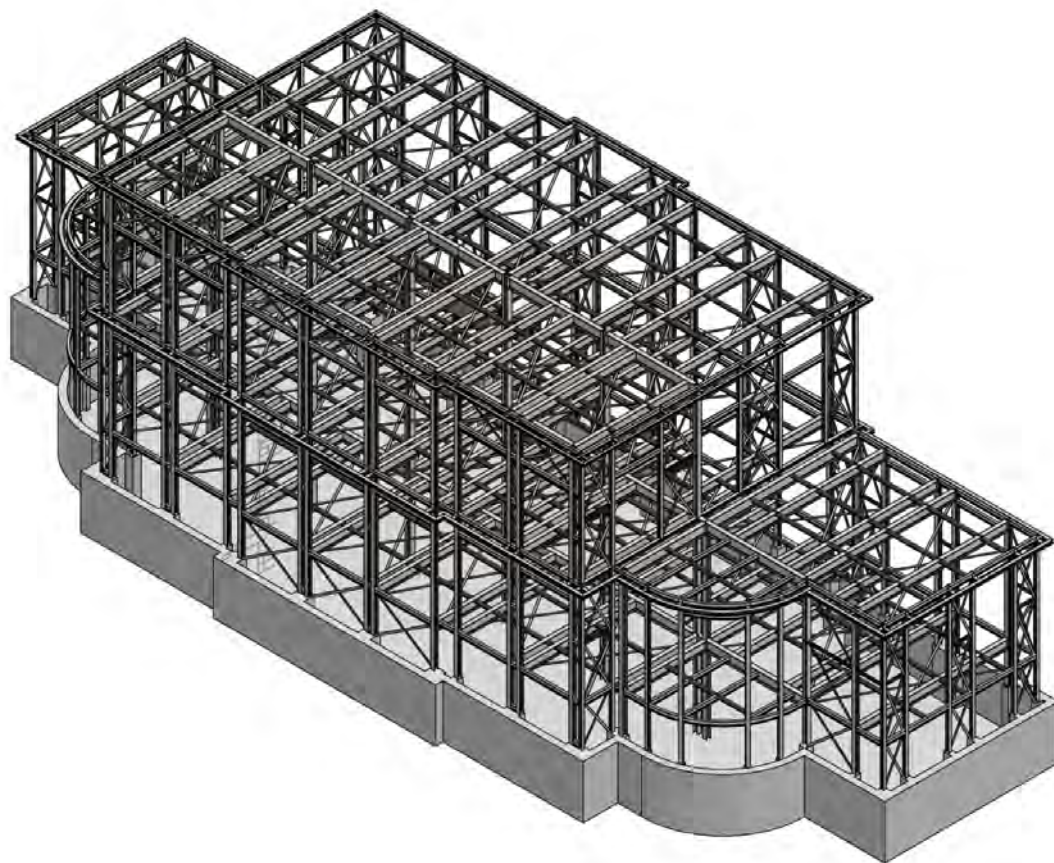
SOUTH FAÇADE



NORTH FAÇADE

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				Plan book	FAISA	A3	Scale:

RECONSTRUCTION OF THE CHATEAU - 02b
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Maitre d'oeuvre:

Entreprise:

Bordeaux Chateau
Metal structure

Perspective

Phase SC_REBC_PLN 1

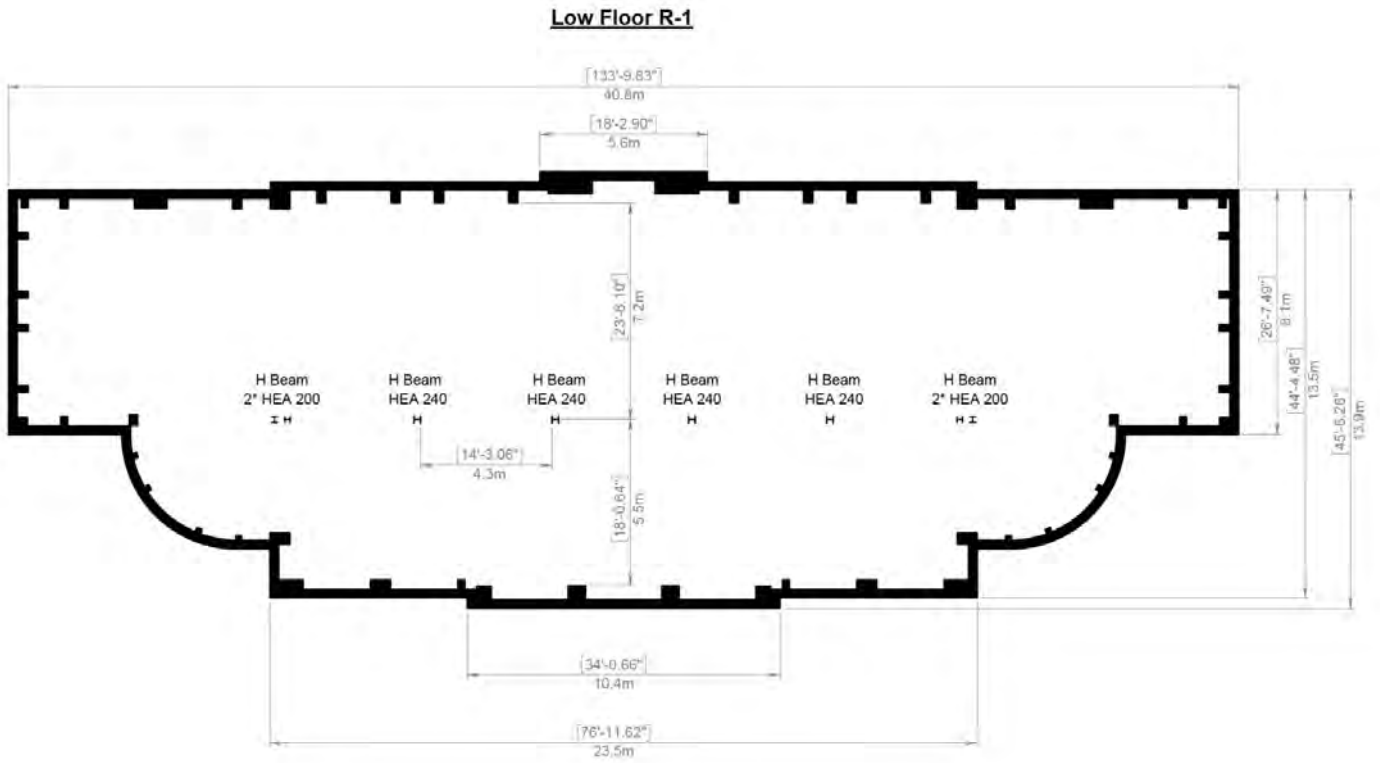
A3 Ech :1/125

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RECONSTRUCTION OF THE CHATEAU - 02b

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Peripheral entrenched structure: concrete walls and columns
 central metal columns on concrete footings

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Maitre d'oeuvre:

Entreprise:

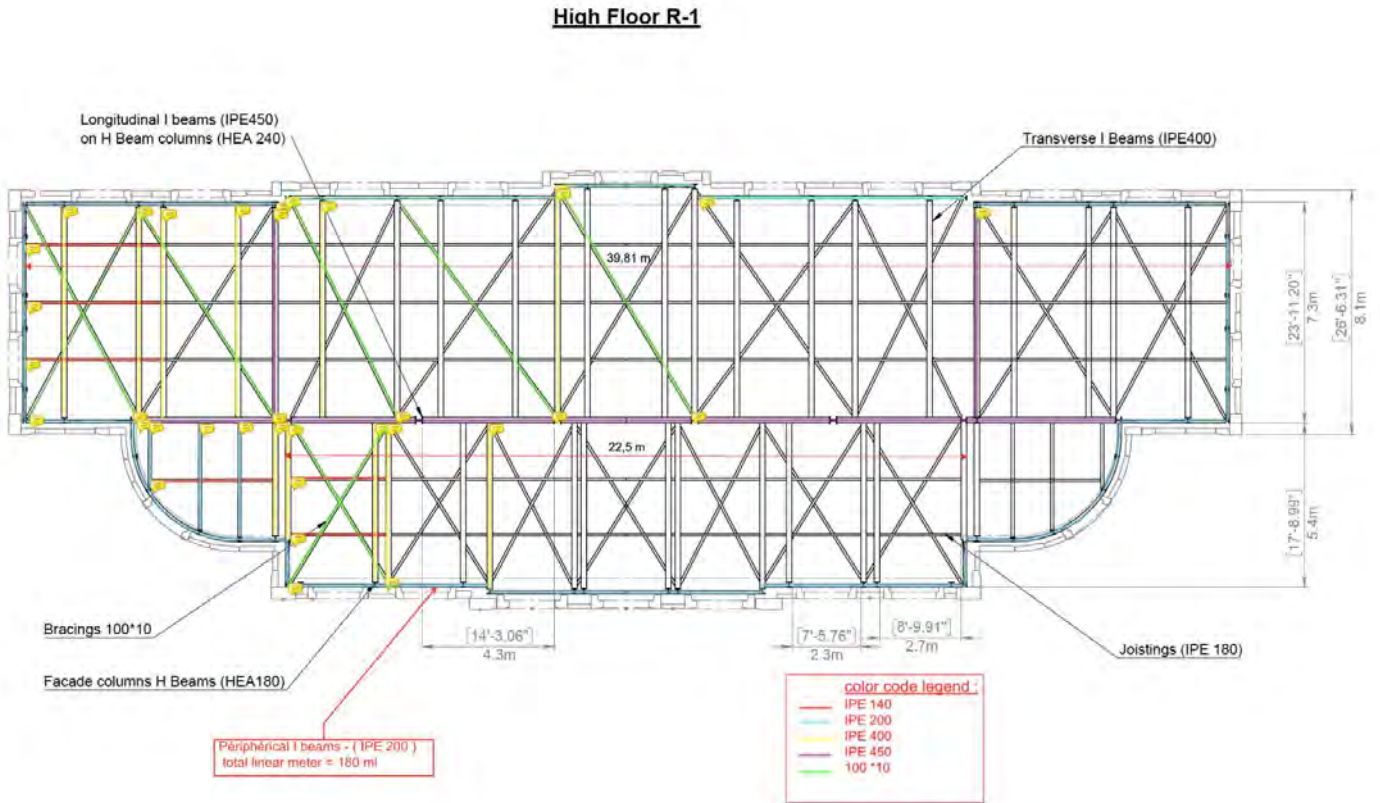
Bordeaux Chateau
Metal structure
 Low Floor R-1

Phase	SC_REBC_PLN	2
	A3	Ech :1/125
FAISA		

RECONSTRUCTION OF THE CHATEAU - 02b

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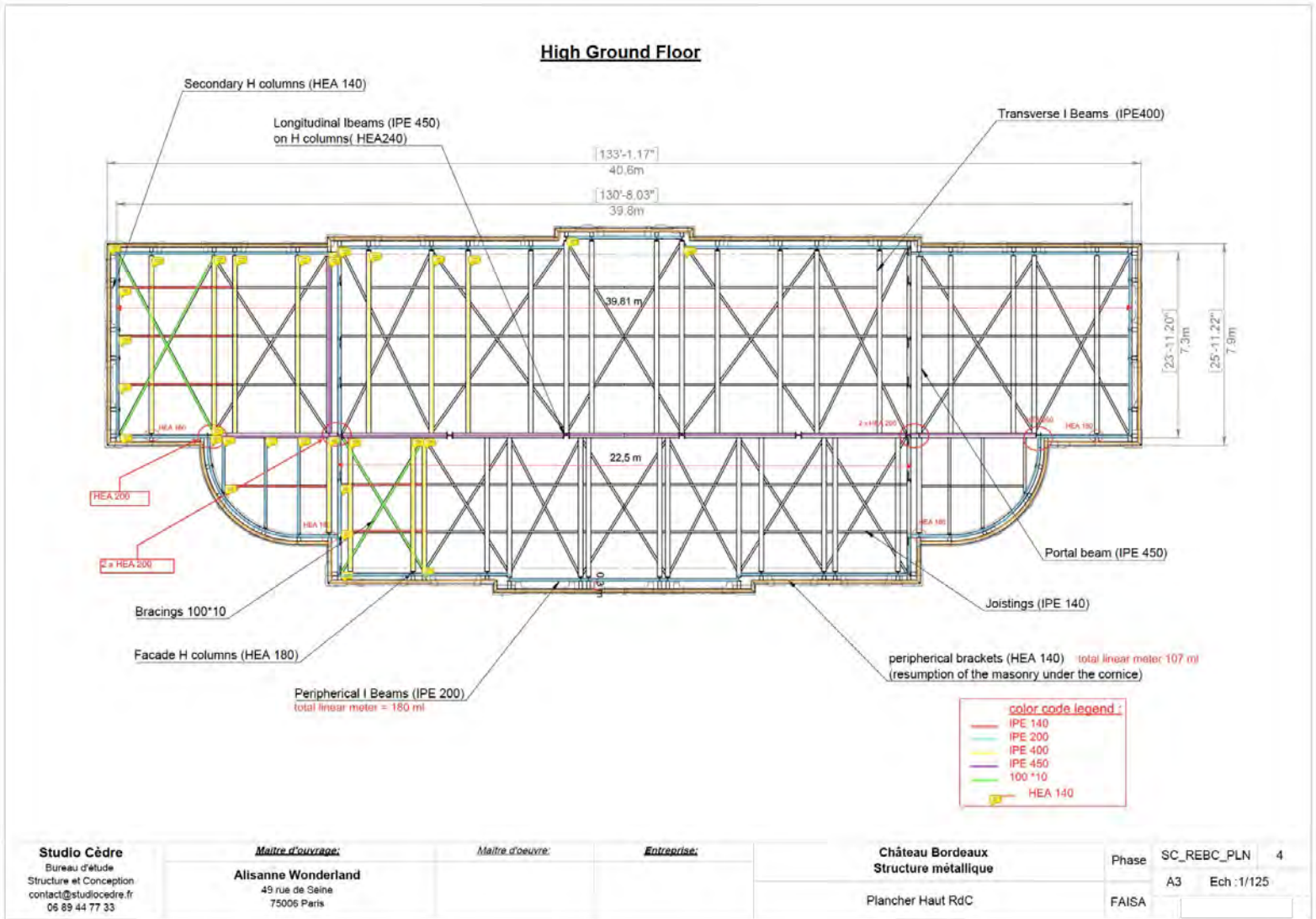
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				Plancher Bas R-1	A3 Ech :1/125 FAISA

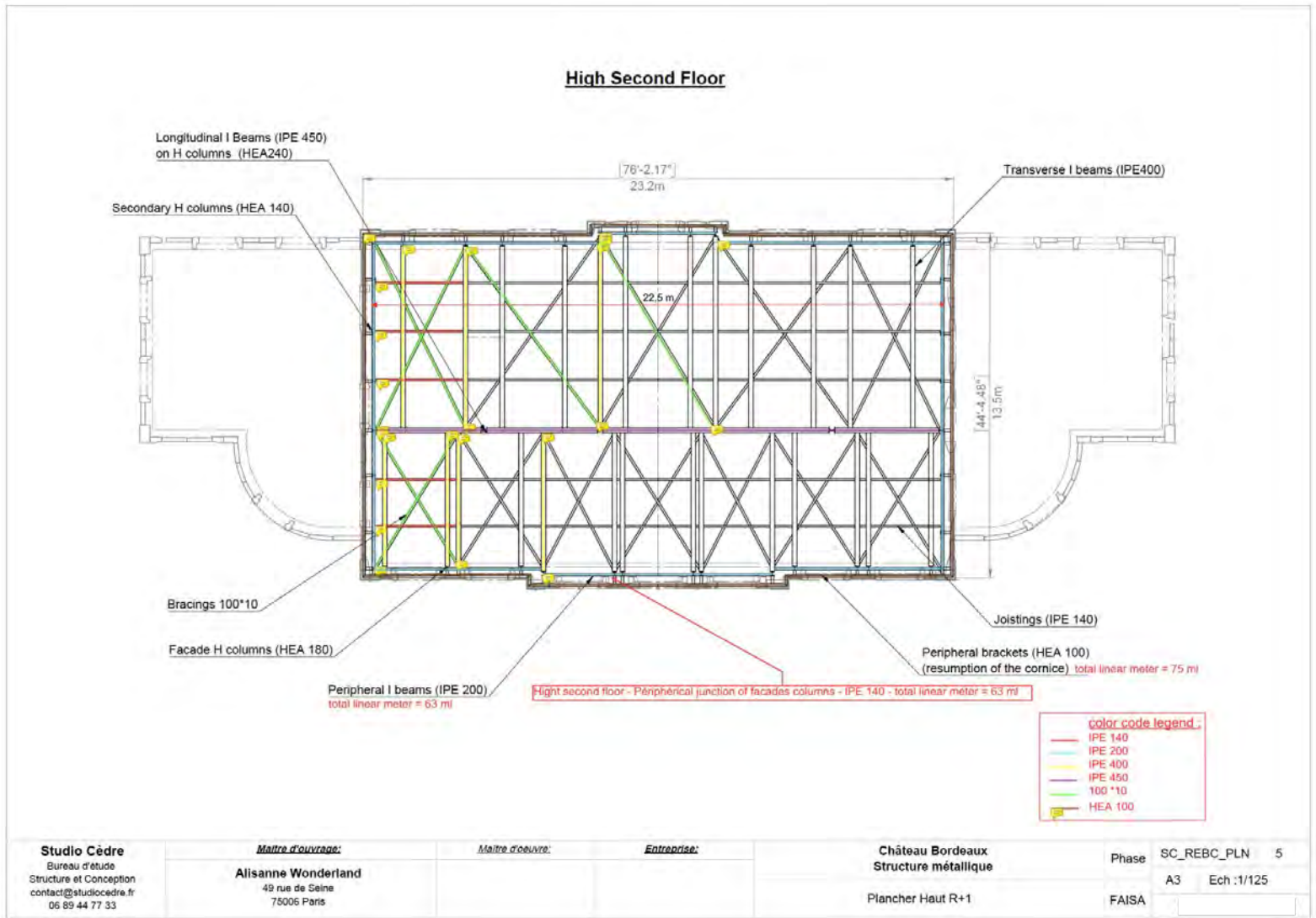
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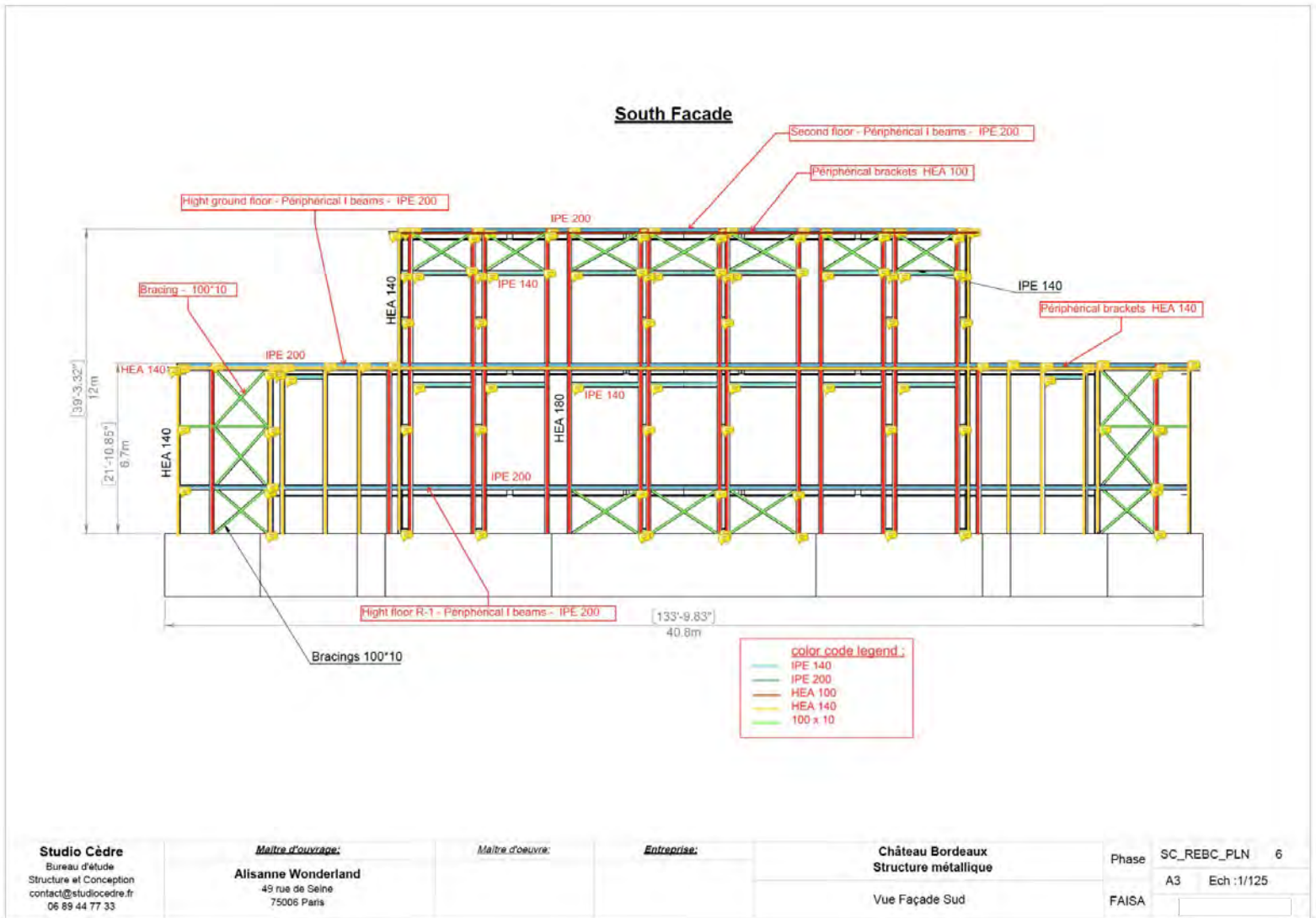
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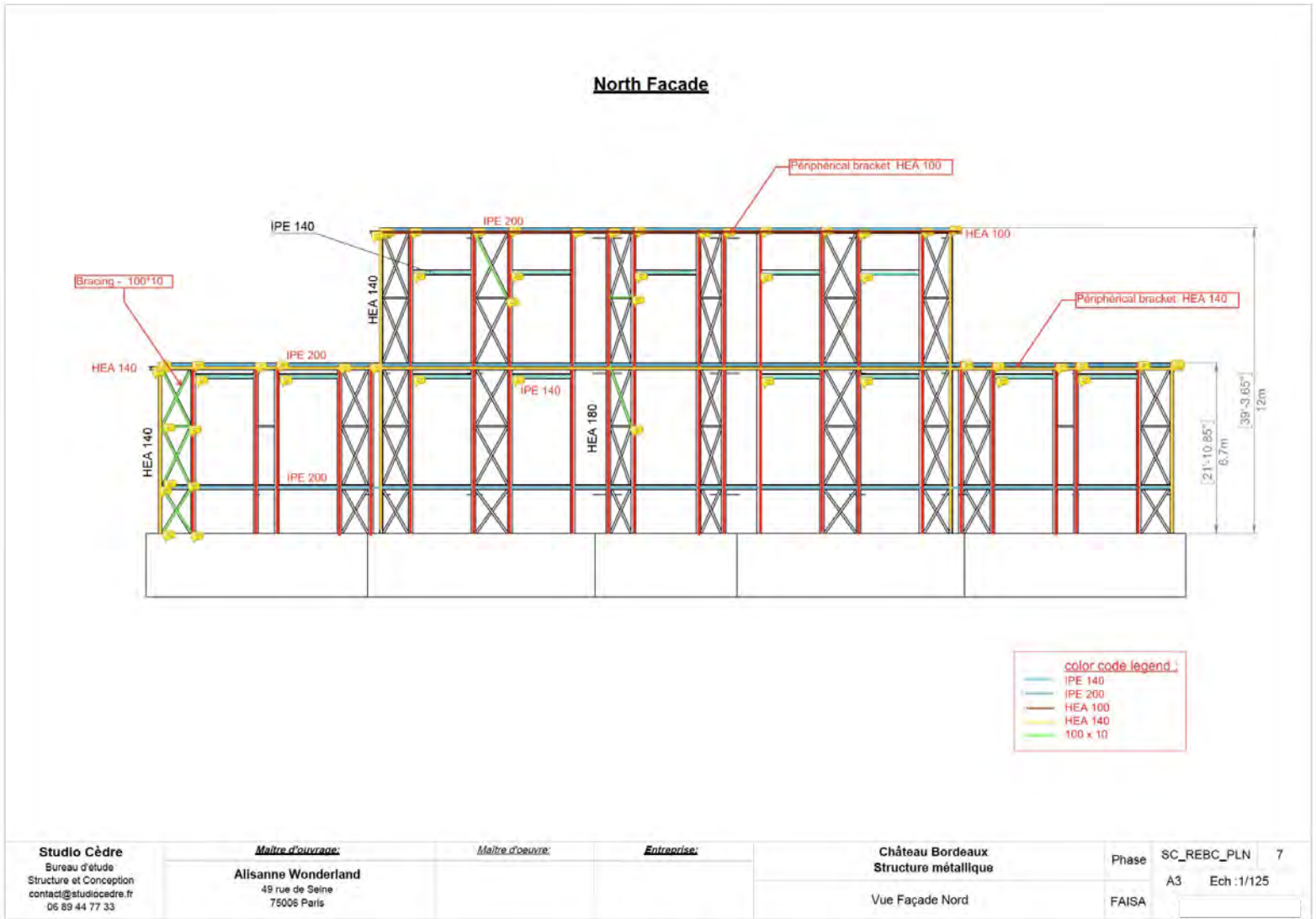
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RECONSTRUCTION OF THE CHATEAU - 02b

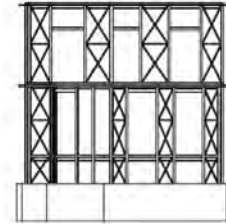
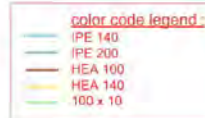
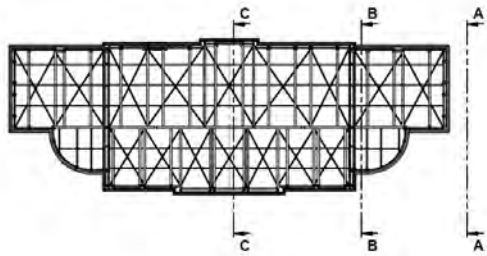
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(VALUE JANUARY 2023)

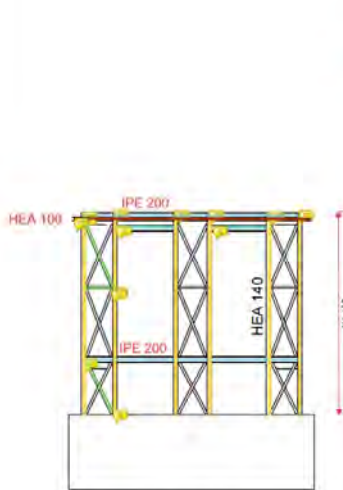


EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

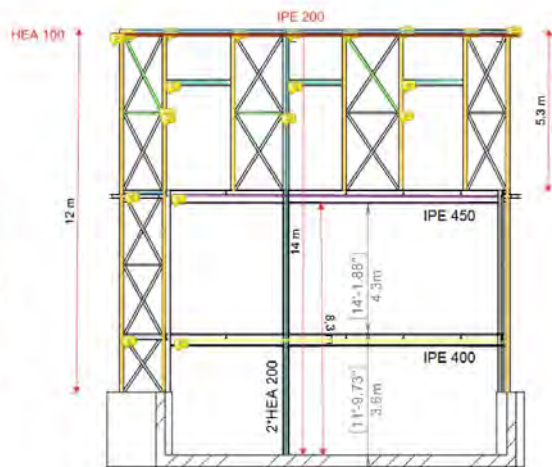
(VALUE JANUARY 2023)



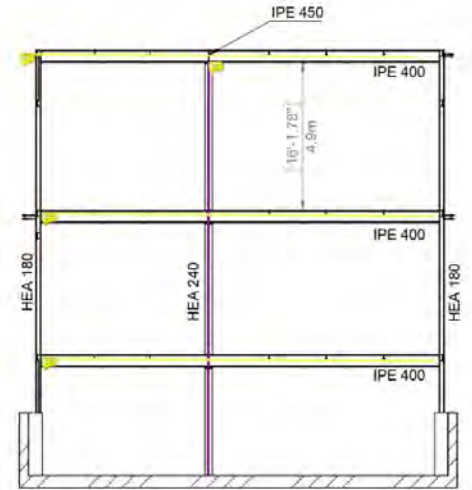
Side view



Section A-A



Section B-B



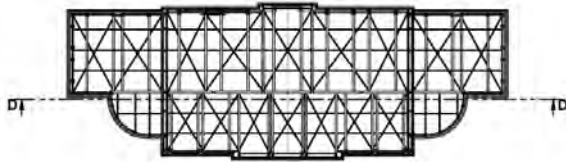
Section C-C

Studio Cèdre Bureau d'étude Structure et Conception contact@studiocedre.fr 06 69 44 77 33	Maitre d'ouvrage: Aisanne Wonderland 49 rue de Seine 75006 Paris	Maitre d'oeuvre:	Entreprise:	Château Bordeaux Structure métallique	Phase SC_REBC_PLN 8
				Coupes transversales	FAISA A3 Ech :1/125

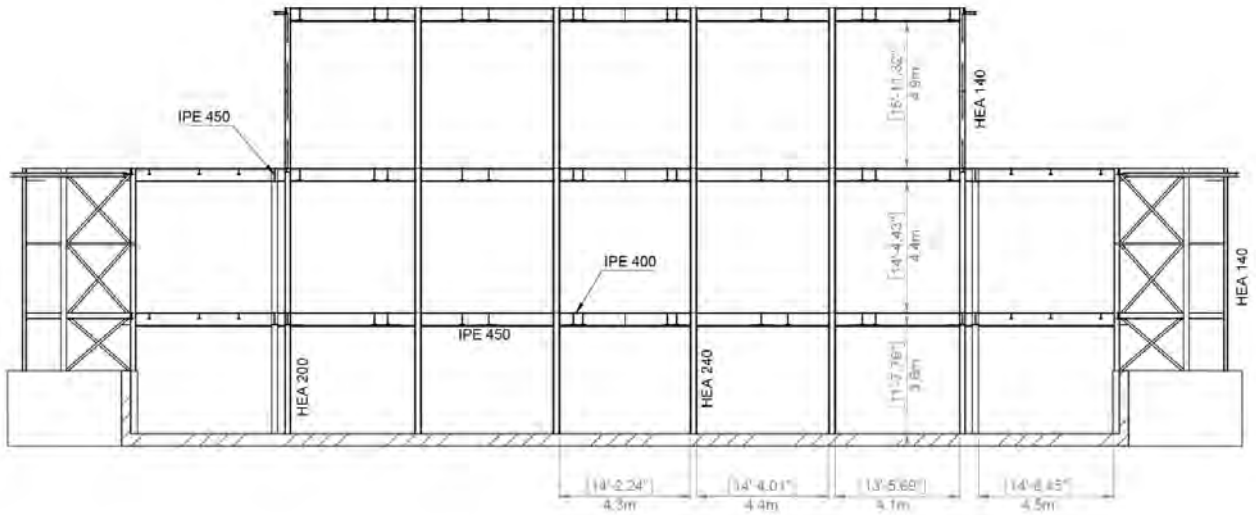
RECONSTRUCTION OF THE CHATEAU - 02b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)



Longitudinal Section



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Maitre d'ouvrage:
Alisanne Wonderland
49 rue de Seine
75006 Paris.

Maitre d'œuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupe longitudinale

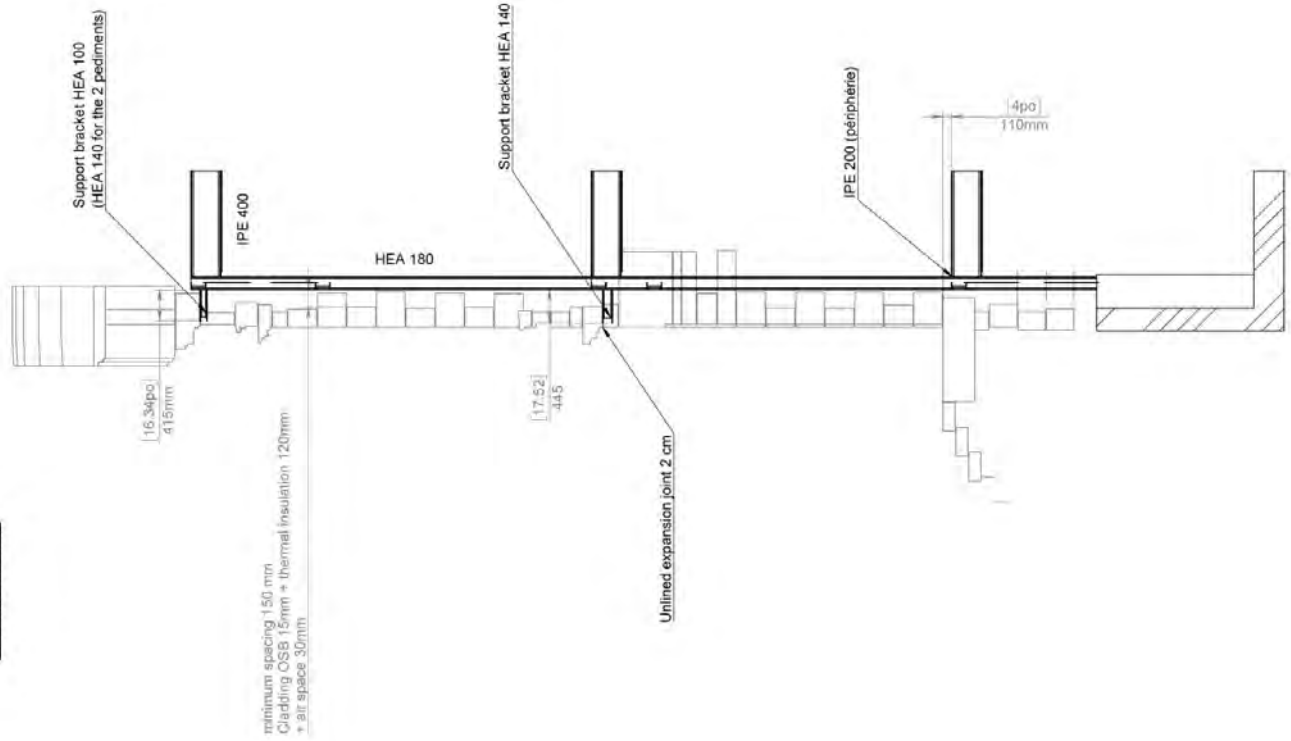
Phase	SC_REBC_PLN	9
	A3	Ech : 1/125
FAISA		

RECONSTRUCTION OF THE CHATEAU - 02b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section

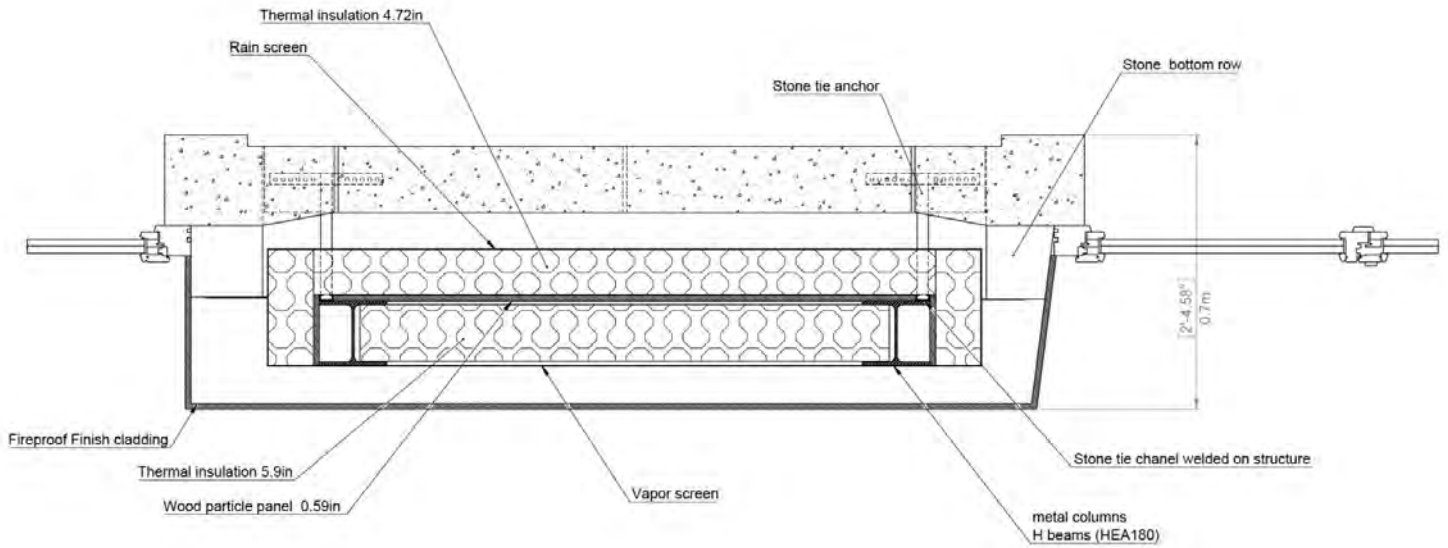


Studio Cèdre Bureau d'étude Structure et Conception contact@studiocedre.fr 06 89 44 77 33	Maitre d'ouvrage: Ailsanne Wonderland 49 rue de Seine 75006 Paris	Maitre d'oeuvre:	Entreprise:	Château Bordeaux Structure métallique Coupe détail façade	Phase SC_REBC_PLN 10 A3 Ech :1/50 FAISA
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EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section



Studio Cèdre
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Structure et Conception
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06 89 44 77 33

Maitre d'ouvrage:
Alisanne Wonderland
49 rue de Seine
75006 Paris

Maitre d'oeuvre:

Entreprise:

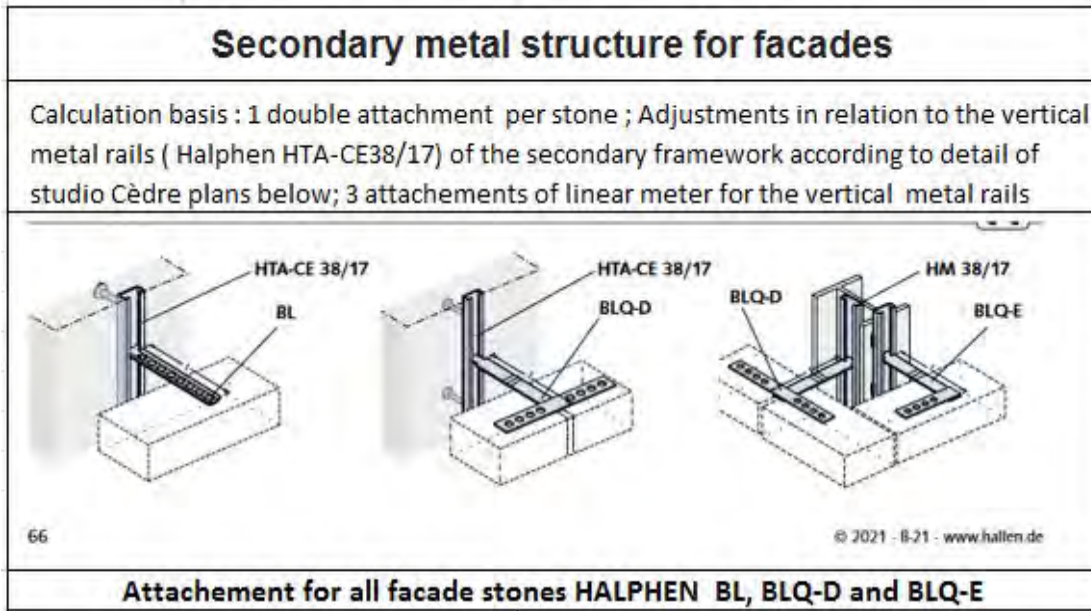
Château Bordeaux
Structure métallique

Coupe détail façade

Phase	SC_REBC_PLN	10
	A3	Ech : 1/10
FAISA		

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

The secondary steel structure allows the attachment of the stones. See *detail below*



The cost estimate of metallic structures is: 616 000 € (excluding tax).

1 - Primary metal structure for floors and facades		
Total cost estimate primary metallic structure =	sub total 1 =	515 000,00
2 - Secondary metallic structure for facades		
Total cost estimate secondary metallic structure =	sub total 2 =	100 754,00
Total cost estimate metallic structures excluding tax = (€)	sub total 1 +2 =	615 754,00
	rounded value total estimate	616 000

Spreadsheets with calculations are on pages 34 through 37.

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Bordeaux Chateau - Basis of calculation : Plans file Studio Cédre dated 30/11/2021												
Table n° 1 : based on facade plans												
legend	type	location on the plans	South facade		North facade		East facade		West facade		All facades	
			calculation detail	s.total 1	calculation detail	s.total 2	calculation detail	s.total 3	calculation detail	s.total 4	calculation detail	TOTAL linear meter
			m	m	m	m	m	m	m	m	m	lm
	HEA 140	Secondary H columns	4*2*6,7	53.60								248.40
	HEA 180	Façade H columns	14*12*6*6,7	208.20	12*12*10*6,7	208.20			6*6,7*3*12*4*5,3	97.40	6*6,7*3*12*4*5,3	416.40
	IPE 140	All levels	17*0,25*8*2,3*6*2,6*2*1,5	41.25	14*2,3	32.20			2*1,9*1,7*3	8.90	2*1,9*1,7*3	91.25
	Bracings 100*10	All levels	8*2,85*4*2,6*12*2,9*2*3,5	75.00	16*2,4*16*2,3*16*2,8*12*1,1*4*20*1,95	176.20			12*2,4*6*1,8*3*0,9*12*2,65*8*3*3*1,35*2*1,5	105.15	12*2,4*6*1,8*3*0,9*12*2,65*8*3*3*1,35*2*1,5	461.50
Table n° 2 : based on sections plans												
Sections B, C et D												
legend	type	location on the plans	calculation detail	s.total	TOTAL linear meter							
			m	m	lm							
	HEA 200	H Beams columns	2*8,3*2*14	44.60	44.60							
	HEA 240	H Beams columns	4*13,7	54.80	54.80							
Table n° 3 : based on the periphery of the floor plans												
Ground and first floor plans												
legend	type	location on the plans	calculation detail	s.total	TOTAL linear meter							
			m	m	lm							
	HEA 140	Peripheral brackets Height ground floor		107.00	128.00							
		Support brackets HEA 140	70*0,3	21.00								
	HEA 100	Peripheral brackets Height second floor		75.00	88.80							
		Support brackets HEA 100	46*0,3	13.80								
	IPE 200	Height floor R-1 - Périrphérique l beams		180.00	423.00							
		Height ground floor - Périrphérique l beams		180.00								
		Height second floor - Périrphérique l beams		63.00								
Table n° 4 : based on floor plans												
High floor R-1												
legend	type	location on the plans	calculation detail	s.total	High ground floor		High second floor		All floors			
			m	m	calculation detail	s.total	calculation detail	s.total	calculation detail	s.total	calculation detail	TOTAL linear meter
			m	m	m	m	m	m	m	m	m	lm
	IPE 140	Joistings	39,8*3+22,5*2*2*4	172.40	39,8*3+22,5*2*2*4	172.40	22,5*5	112.5	457.30			457.30
	IPE 200	Joistings	(3,7*3,5*3,15)*2	20.70	(3,7*3,5*3,15)*2+11,2	31.90			52.60			52.60
	IPE 400	Transverse l beams	6,9*8*7,15*8*7,45*	220.60	6,9*8*7,15*8*7,45*	220.60	7,1*8*7,6*4*5,15*	171.60	612.80			612.80
	IPE 450	Longitudinal l beams	32,3	32.3								
		Portal beams	6,9*2	46.10	6,9*2	46.10	22,5	22.50	114.70			114.70
	100 x 10	Bracings	7,7*4*8*4*7,85*4*	229.30	7,7*4*8*4*7,85*4*	229.30	7,7*4*8*4*8,45*2	163.7	622.30			622.30

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Basis of calculation : Plans file Studio Cèdre dated 30/11/2021

Note 1: for the details of calculation see this spreadsheet Sheet 1 (S1)

Primary metal structure for floors and facades

Table n° 1 : based on facade plans

legend	type	location on the plans	TOTAL linear meter (1)	weight per linear meter per profile	total weight per profile
			m	kg	kg
	HEA 140	Secondary H columns	248.40	25.40	6,309.36
	HEA 180	Façade H columns	416.40	36.60	15,240.24
	IPE 140	All levels	91.25	13.30	1,213.63
	Bracings 100*10	All levels	461.50	7.85	3,622.78

Table n° 2 : based on sections plans

legend	type	location on the plans	TOTAL linear meter (1)	weight per linear meter per profile	total weight per profile
	HEA 200	H Beams columns	44.60	43.60	1,944.56
	HEA 240	H Beams columns	54.80	62.10	3,403.08

Table n° 3 : based on the periphery of the floor plans

legend	type	location on the plans	TOTAL linear meter (1)	weight per linear meter per profile	total weight per profile
	HEA 140	Peripheral brackets Height ground floor	128.00	25.40	3,251.20
		Support brackets HEA 140			
	HEA 100	Peripheral brackets Height second floor	88.80	17.20	1,527.36
		Support brackets HEA 100			
	IPE 200	Height floor R-1 -Périphérique I beams	6,505.09	23.10	3,251.20
		Height ground floor -Périphérique I beams			
		Height second floor - Périphérique I beams			

Table n° 4 : based on floor plans

legend	type	location on the plans	TOTAL linear meter (1)	weight per linear meter per profile	total weight per profile
	IPE 140	Joistings	457.30	13.30	6,082.09
	IPE 200	Joistings	52.60	23.10	1,215.06
	IPE 400	Transverse I beams	612.80	68.30	41,854.24
	IPE 450	Longitudinal I beams	114.70	80.00	9,176.00
		Portal beams			
	100 x 10	Bracings	622.30	7.85	4,885.06

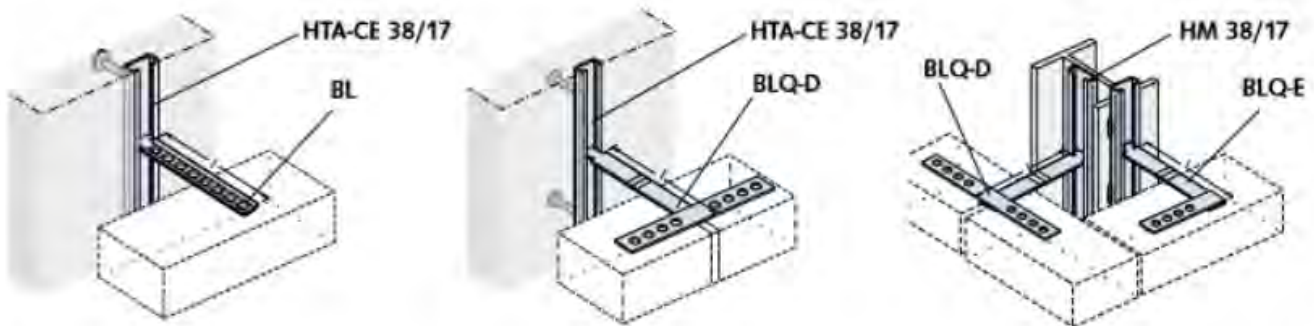
Total weight metal structure			Kg		102,975.85
			rounded value	kg	102,976.00
				Tonne	103

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Secondary metal structure for facades

Calculation basis : 1 double attachment per stone ; Adjustments in relation to the vertical metal rails (Halphen HTA-CE38/17) of the secondary framework according to detail of studio Cèdre plans below; 3 attachments of linear meter for the vertical metal rails.



66

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Attachment for all facade stones HALPHEN BL, BLQ-D and BLQ-E

Location	Units
Numbered stones	3698
Base on balusters	134
South pediment	38
North pediment	22
North entry with columns	40
Total stone attachments	3932
Vertical metal rails HALPHEN HTA-CE 38/17	
Detail of calculation	Linear meter
3932/3	1,310.67
rounded value	1310

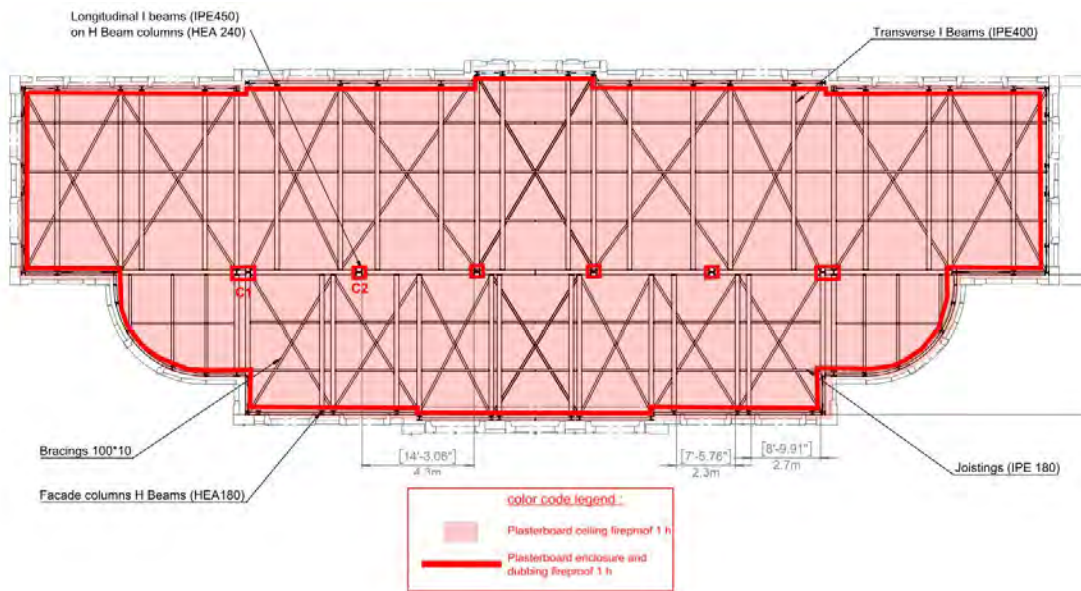
RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Basis of calculation : Plans file Studio Cèdre dated 30/11/2021			
1 - Primary metal structure for floors and facades			
Total weight metallic structure	Steel estimate per ton		
All steel profiles	Tonne	€/tonne	€
	103	5000	515,000.00
Total cost estimate primary metal structure =		subtotal 1 =	515,000.00
2 - Secondary metal structure for facades			
stainless steel			
	U or ml	Unit price	
Attachments	3932	12	47,184.00
Vertical metal rails	1310	48	53,570.00
Total cost estimate secondary metal structure =		subtotal 2 =	100,754.00
Total cost estimate metal structures excluding tax = (€)		subtotal 1 +2 =	615,754.00
		rounded value total estimate	616,000

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Fire stability of the metal structure and wall insulation

The metallic structure that supports the stones and the floor must be protected against fire with plasterboard. The fireproof prevention of plasterboard is at least an hour.



Plans for the fire stability structure (03b) are on pages 39 through 50.

On the other hand, the exterior walls must have thermal insulation.

The cost estimate of fireproof metal structure and walls insulation is: 216 000 € (excluding tax).

	estimate cost excluding tax
	€
Plasterboard enclosure fireproof 1 h for metal columns	106 920,00
Plasterboard ceiling fireproof 1 h	73 860,00
Internal insulation of exterior walls	34 685,00
Total estimate cost excluding tax =	215 465,00
rounded value	216 000,00

Spreadsheets with calculations are on pages 51 and 52.

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

BORDEAUX CHATEAU

Reconstruction on metal structure

Detailed location of the fire stability to the metal structure based on the plans of Studio Cèdre -
January 2023 - DMB Construction durable

Feasibility study



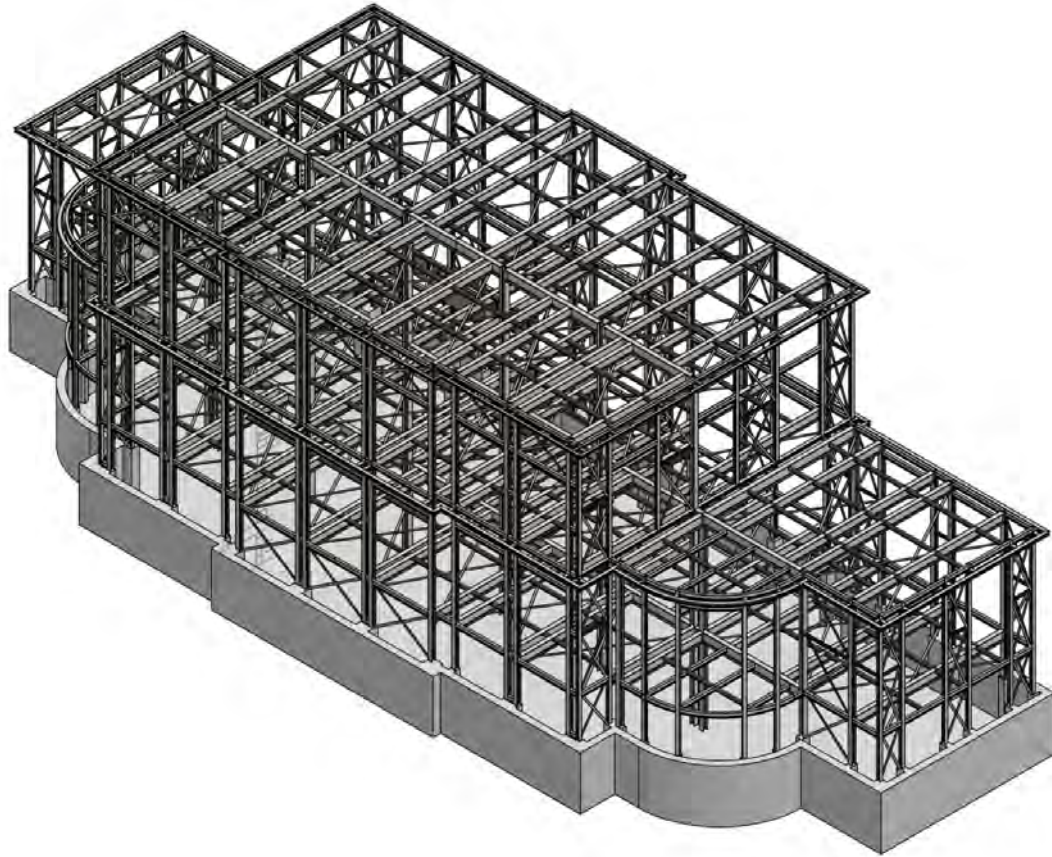
SOUTH FACADE



NORTH FACADE

Studio Cèdre Bureau d'étude Structure et Conception contact@studiocedre.fr 06 89 44 77 33	Maitre d'ouvrage: Alisane Wonderland 49 rue de Seine 75006 Paris	Maitre d'oeuvre:	Entreprise:	Bordeaux Chateau Metal structure	Phase SC_REBC_PLN 00 A3 Scale:
				Plan book	FAISA

RECONSTRUCTION OF THE CHATEAU - 03b
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
(VALUE JANUARY 2023)



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Maitre d'ouvrage:

Allsanne Wonderland
49 rue de Seine
75006 Paris

Maitre d'oeuvres:

Entreprise:

Bordeaux Chateau
Metal structure

Perspective

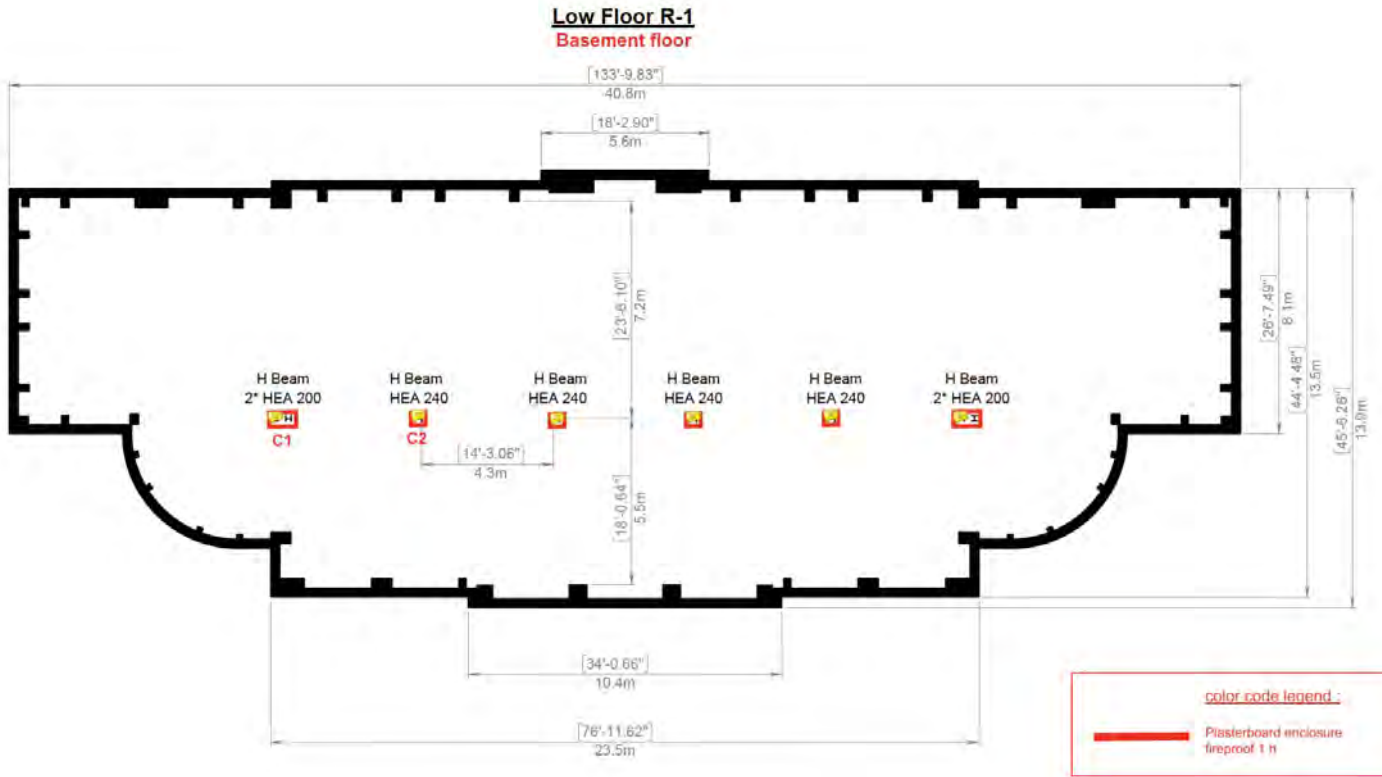
Phase SC_REBC_PLN 1

A3 Ech :1/125

FAISA

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(VALUE JANUARY 2023)

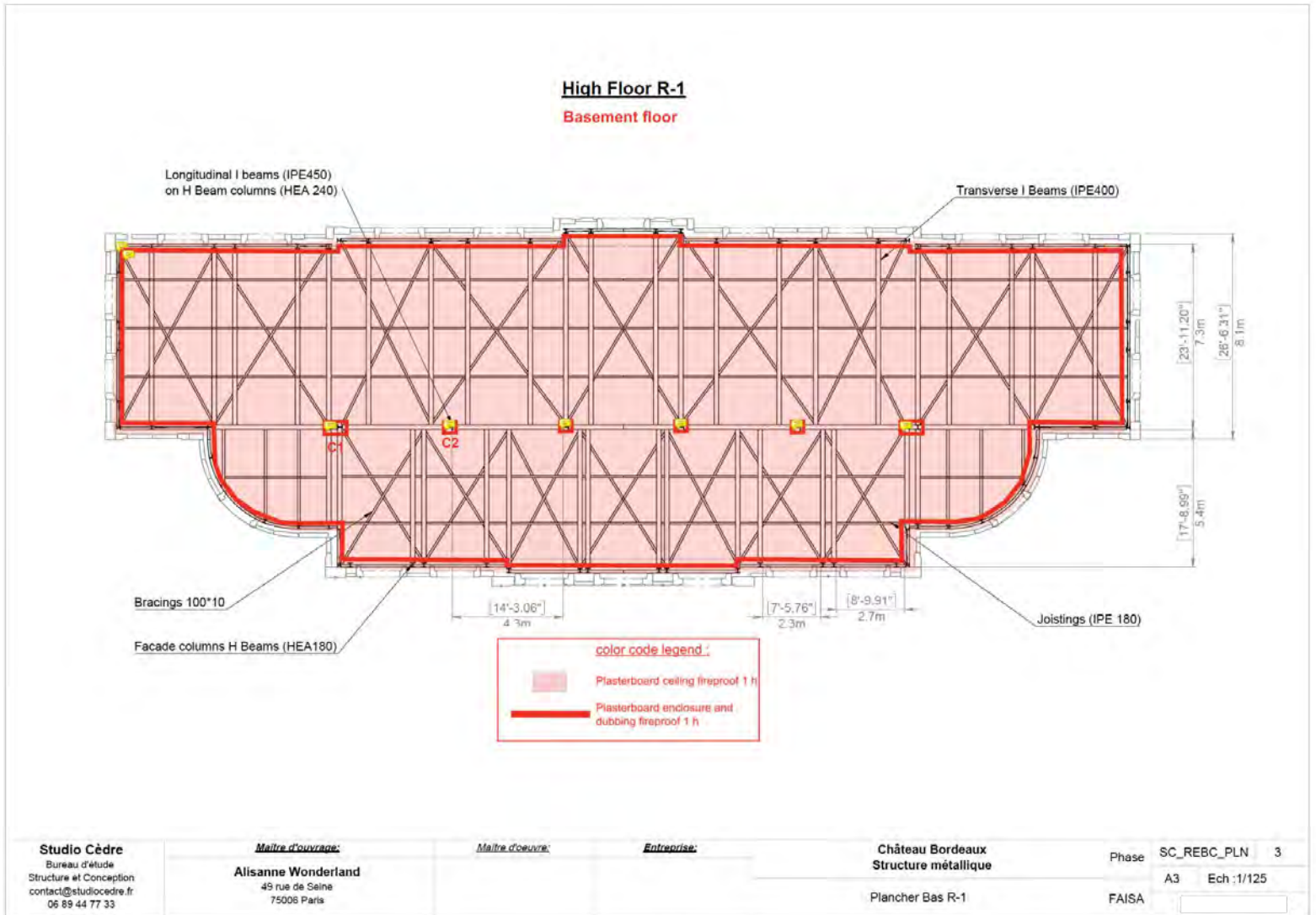


Peripheral entrenched structure: concrete walls and columns
central metal columns on concrete footings

Studio Cède Bureau d'étude Structure et Conception contact@studiodcede.fr 06 89 44 77 33	<p style="text-align: center;"><i>Maitre d'ouvrage:</i></p> Ailsanne Wonderland 49 rue de Seine 75006 Paris	<p style="text-align: center;"><i>Maitre d'oeuvre:</i></p>	<p style="text-align: center;"><i>Entreprise:</i></p>	Bordeaux Chateau Metal structure Low Floor R-1	Phase FAISA	SC_REBC_PLN 2 A3 Ech :1/125
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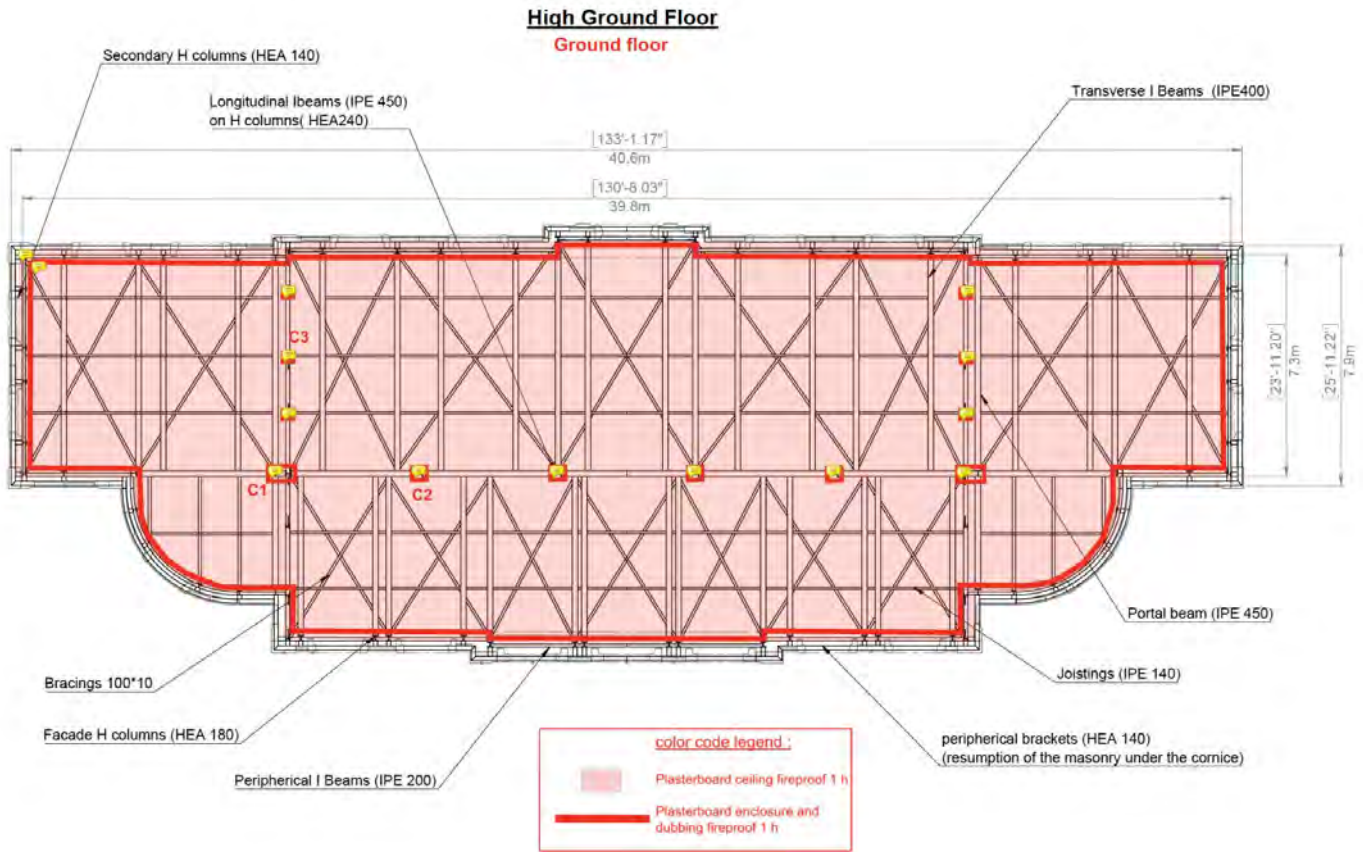
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

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EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

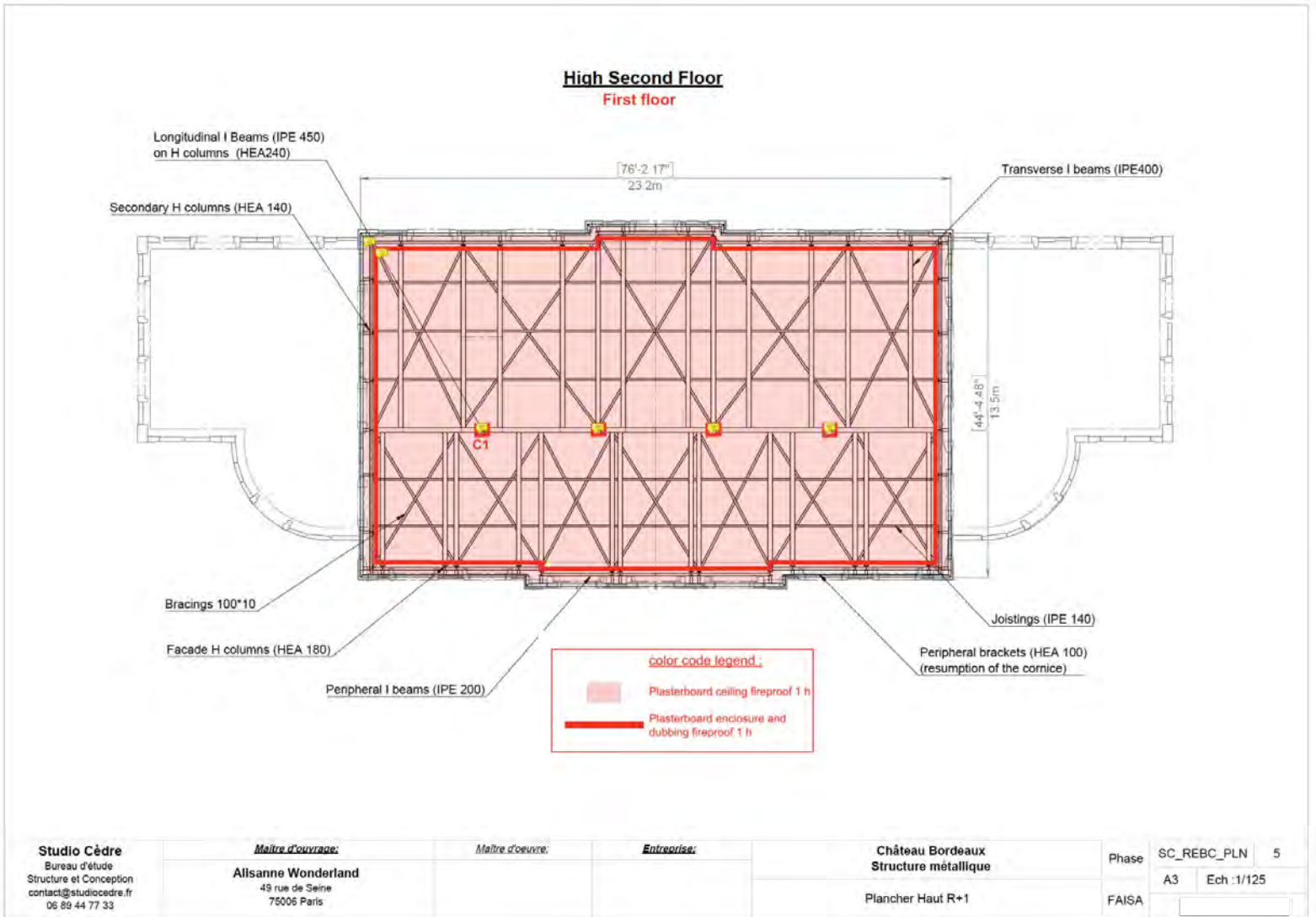
(VALUE JANUARY 2023)



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				Plancher Haut RdC	FAISA

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(VALUE JANUARY 2023)

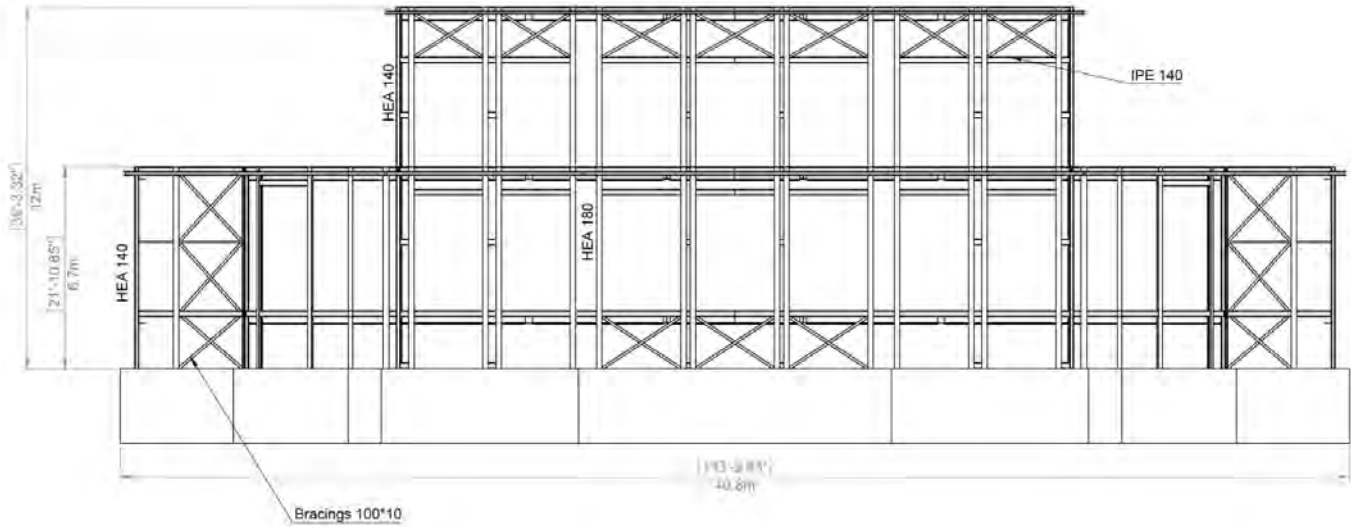


RECONSTRUCTION OF THE CHATEAU - 03b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

South Facade



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Allsanne Wonderland
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75006 Paris

Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique
Vue Façade Sud

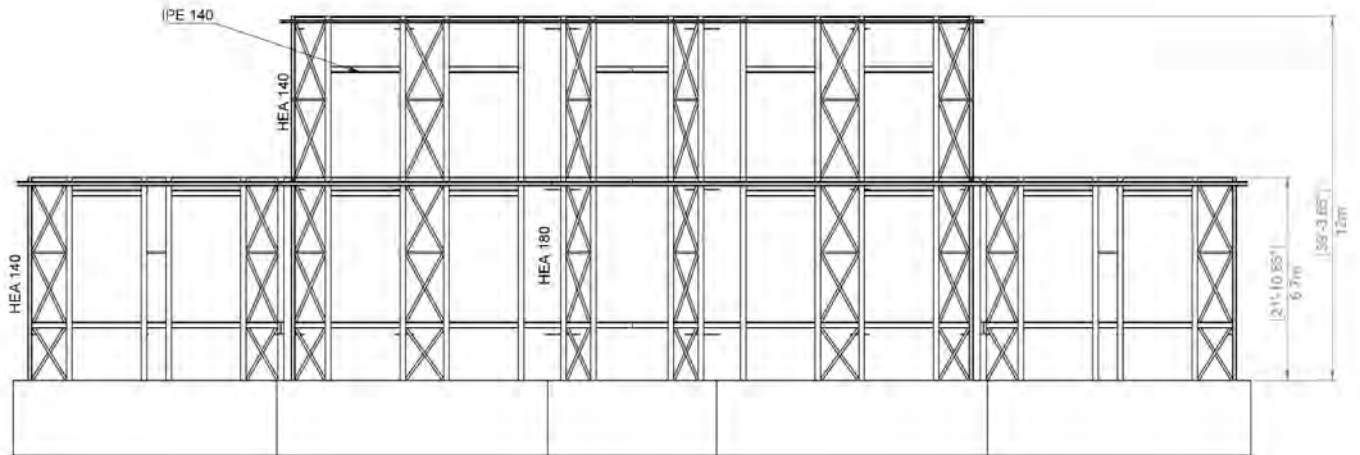
Phase SC_REBC_PLN 6
A3 Ech :1/125
FAISA

RECONSTRUCTION OF THE CHATEAU - 03b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

North Facade



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06 89 44 77 33

Maitre d'ouvrage:
Allsanne Wonderland
49 rue de Selme
75006 Paris

Maitre d'oeuvre:

Entreprise:

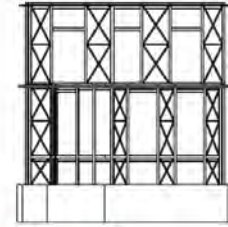
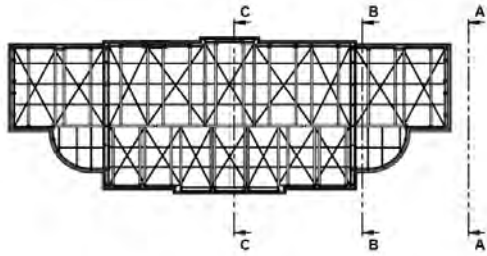
Château Bordeaux
Structure métallique

Vue Façade Nord

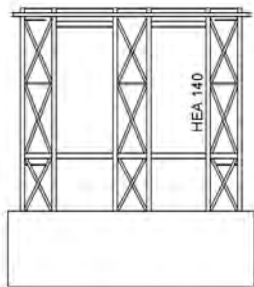
Phase SC_REBC_PLN 7
A3 Ech :1/125
FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

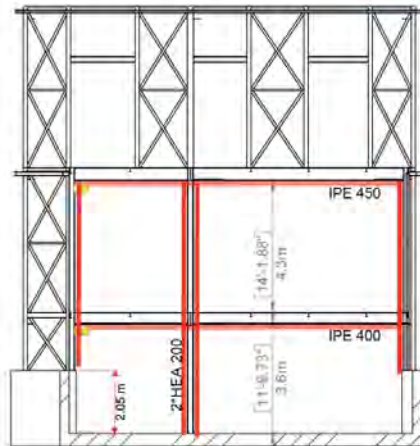
(VALUE JANUARY 2023)



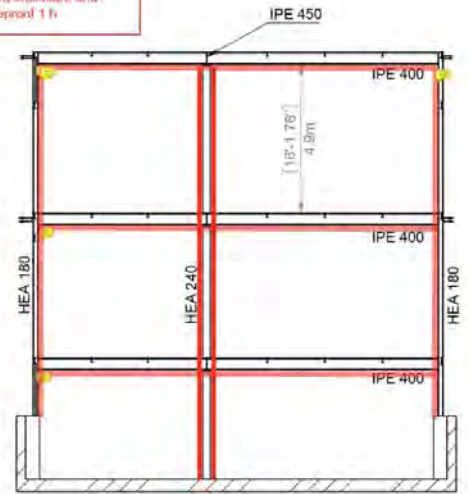
Side view



Section A-A



Section B-B



Section C-C

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Maitre d'ouvrage:
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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
 Structure métallique

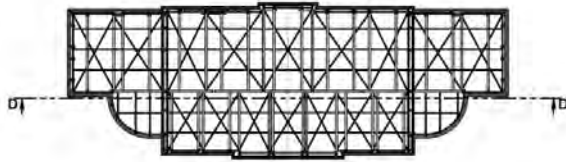
Coupes transversales

Phase SC_REBC_PLN 8
 A3 Ech : 1/125
 FAISA

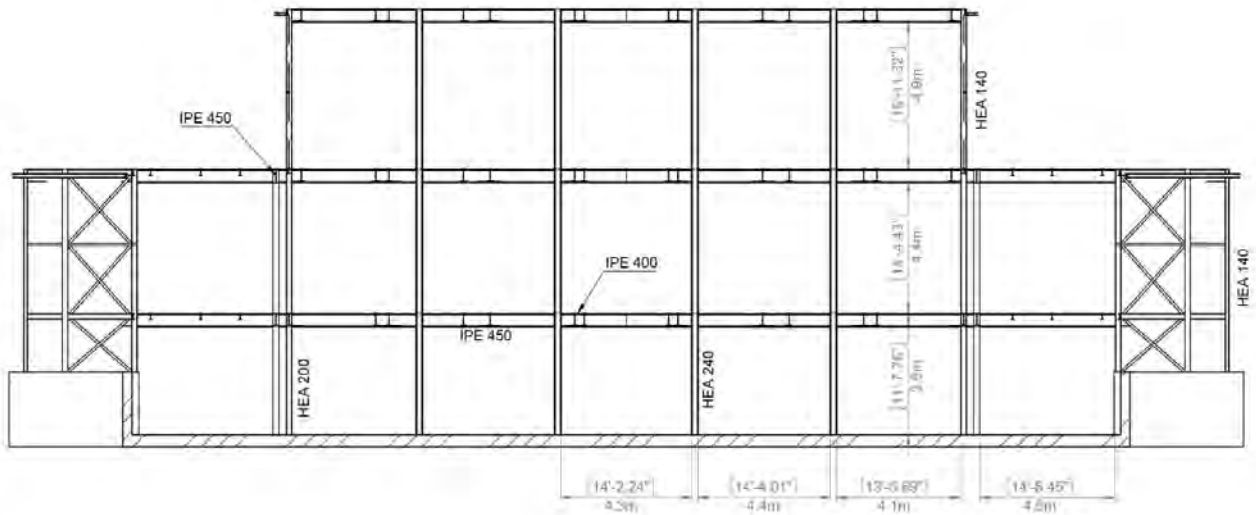
RECONSTRUCTION OF THE CHATEAU - 03b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)



Longitudinal Section



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Bureau d'étude
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Maitre d'ouvrage:
Allsanne Wonderland
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75006 Paris

Maitre d'oeuvre: **Entreprise:**

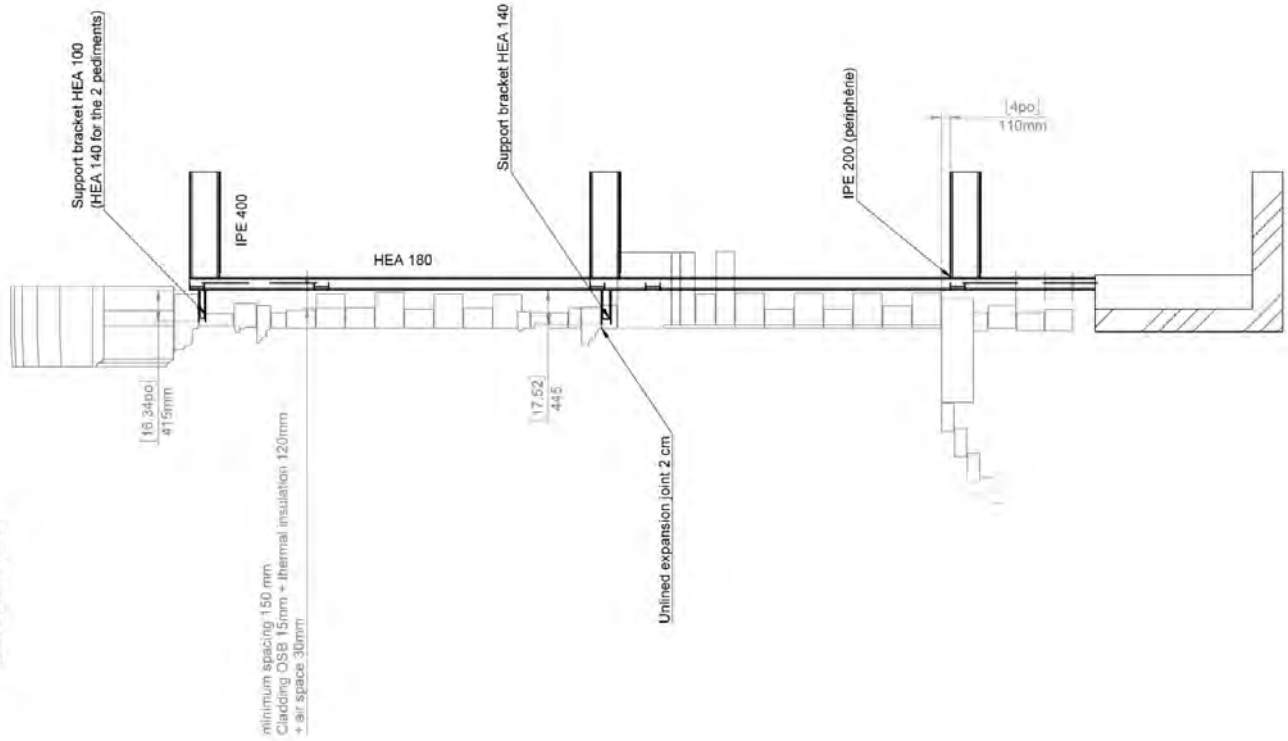
Château Bordeaux
Structure métallique
Coupe longitudinale

Phase SC_REBC_PLN 9
A3 Ech :1/125
FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section



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Maitre d'ouvrage:

Alisanne Wonderland
49 rue de Seine
75006 Paris

Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupe détail façade

Phase SC_REBC_PLN 10

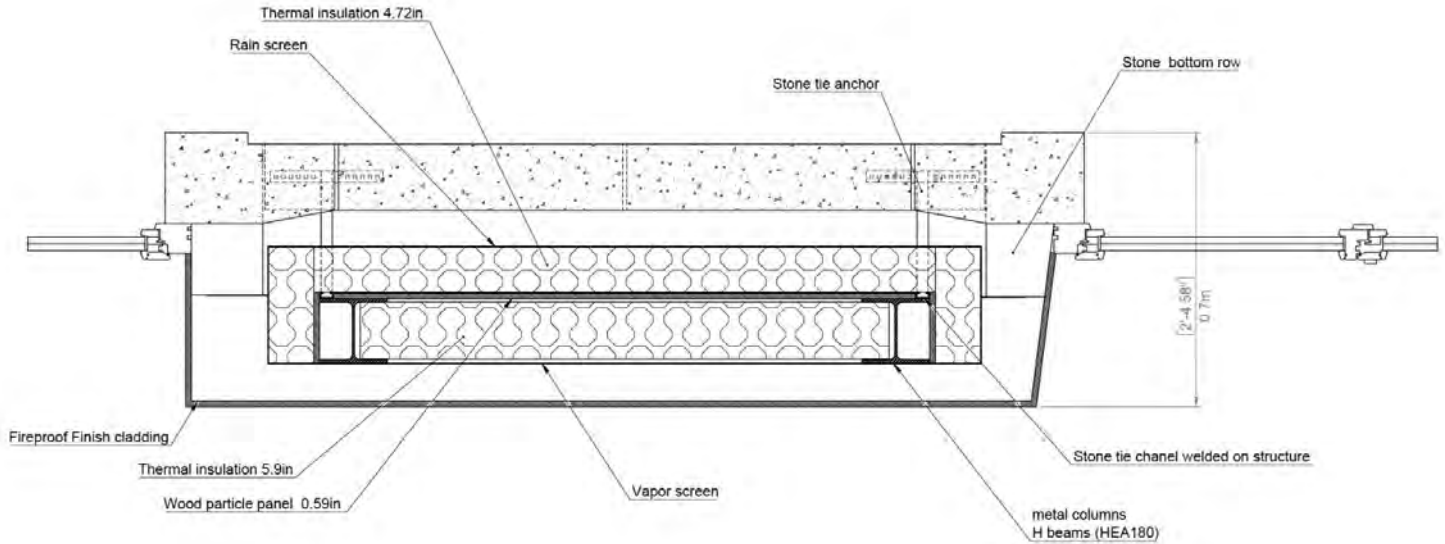
A3 Ech : 1/50

FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section



Studio Cèdre Bureau d'étude Structure et Conception contact@studiodcedre.fr 06 89 44 77 33	<i>Maitre d'ouvrage:</i> Alisanne Wonderiand 49 rue de Selne 75006 Paris	<i>Maitre d'oeuvre:</i>	<i>Entreprise:</i>	Château Bordeaux Structure métallique Coupe détail façade	Phase SC_REBC_PLN 10 A3 Ech :1/10 FAISA
	[Empty Cell]	[Empty Cell]	[Empty Cell]	[Empty Cell]	[Empty Cell]

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - fire stability of metal structure and internal insulation - Detail of calculation by type of element - January 2023

Basis of calculation : Plans file Studio Cèdre dated 30/11/2021

Plasterboard enclosure fireproof 1 h for metal columns

Floor	Type and location on the plan	calculation detail	result
		m	m ²
basement floor	C1	2,85*3,6*2	20.52
	C2	1,9*3,6*4	27.36
	Dubbing	102*2,05	209.10
Ground floor	C1	2,85*4,3*2	24.51
	C2	1,9*4,3*4	32.68
	C3	1,4*4,3*6	36.12
	Dubbing	102*4,3	438.60
First floor	C1	2,85*4,9*4	55.86
	Dubbing	70*4,9	343.00
		total area =	1,187.75
		rounded value	1,188.00

Plasterboard ceiling fireproof 1 h

Floor	Type and location	calculation detail	result
		m	m ²
Basement floor	hight floor R-1		461.55
Ground floor	hight ground floor		461.55
First floor	hight second floor		307.70
		total area =	1,230.80
		rounded value	1,231.00

Internal insulation of exterior valls

Floor	Type and location	calculation detail	result
		m	m ²
Basement floor	Dubbing	102*2,05	209.10
Ground floor	Dubbing	102*4,3	438.60
First floor	Dubbing	70*4,9	343.00
		total area =	990.70
		rounded value	991.00

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

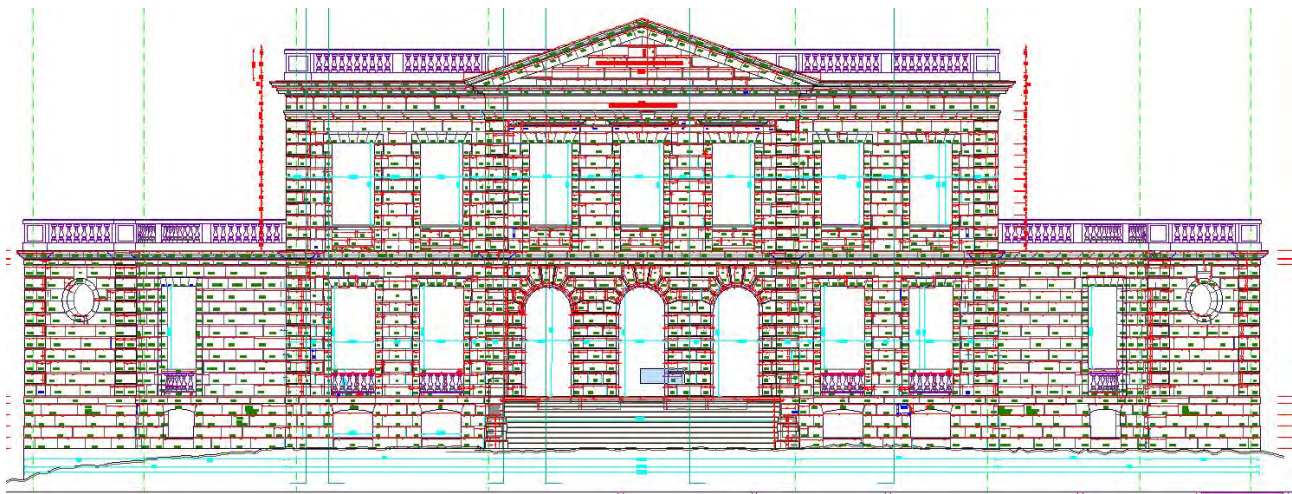
Bordeaux Chateau - fire stability of metal structure and internal insulation - Estimate cost - January 2023			
Basis of calculation : Plans file Studio Cèdre dated 30/11/2021			
	Total area	price per square meter	estimate cost excluding tax
	m ²	€	€
Plasterboard enclosure fireproof 1 h for metal columns	1,188.00	90	106,920.00
Plasterboard ceiling fireproof 1 h	1,231.00	60	73,860.00
Internal insulation of exterior valls	991.00	35	34,685.00
Total estimate cost excluding tax =			215,465.00
rounded value			216,000.00

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Reassembly of the Stones

The reassembly of the stones is the heart of the project. All the stones have been carefully numbered and represented on the CAD plan. Our estimate is based on this plan, the total cost of the work time needed for the reassembly of the stones, the materials, and the management.

Below, plans for the numbered stones: For more detail, please request to view the CAD



The cost estimate for reassembly of the stones is: 1 088 000 € (excluding tax).

Recap	€ (excluding tax)
Cost reassembly stones by workers	742 000,00
Cost materials	145 200,00
Cost management	200 000,00
Total cost estimate reassembly stones (excluding tax)	1 087 200,00
Round value	1 088 000,00

Spreadsheets with calculations on pages 54 through 58.

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - Reassembly of Stones - January 2023				
Basis of calculation : Plans Autocad dated december 2022				
Number of stones according to numbering and by floor level			linear meter	
Level	Seat		U	
			Im	
First floor	A	A1 to A94	94	72
	B	B1 to B129	129	72
	C	C1 to C104	104	72
	D	D1 to D110	110	72
	E	E1 to E103	103	72
	F	F1 to F172	172	72
	G	G1 to G86	86	72
	H	H1 to H84	84	72
	I	I1 to I87	87	72
	J	J1 to J84	84	72
	K	K1 to K87	87	72
	L	L1 to L86	86	72
	M	M1 to M100	100	72
	N	N1 to N105	105	72
	O	O1 to O115	115	72
	P	P1 to P167	167	72
Q	Q1 to Q140	140	72	
Ground floor	R	R1 to R156	156	114
	S	S1 to S232	232	114
	T	T1 to T125	125	114
	U	U1 to U125	125	114
	V	V1 to V129	129	114
	W	W1 to W122	122	114
	X	X1 to X125	125	114
	Y	Y1 to Y123	123	114
	Z	Z1 to Z125	125	114
	I	I1 to I160	160	114
	II	II1 to II150	150	114
	III	III1 to III91	91	114
Basement	IV	IV1 to IV116	116	90
	V	V1 to V107	107	90
	VI	VI to VI98	98	90
	VII	VII to VII99	99	90
		U	Im	
	Total numbered stones =	3936		
	Total meter linear of numbered stones =		2952	
	Average number of stones per linear meter		0.75	

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - Reassembly of Stones - January 2023			
Estimated time for reassembly of the stones			
Basis of calculation : Plans Autocad dated december 2022			
Work task	Time estimate	Hours of workers estimate	
		detail of calculation	Hours
Stone cleaning for all stone	30 minutes per stone	4620*0,5	2310
Various stone préparation (cutouts and adjustments)	60 minutes per stone on 10% to the total stones	4620*10%	469
Preparation of the facade stones for the installation of the metal fasteners	15 minutes per stone for 100 % of the facades	2952*0,25	663
Placement of numbered blocks stones for all facades	10 ml per day for 2 workers	2952/10*2*8	4723
Installation of window bay balusters	2 windows bay per day at 2 workers	14/2*2*8	112
Balustrades of terraces			
Base and handrail installation	10 ml per day for 2 workers	115/10*2*8	184
Installation of balusters	3 ml per day for 2 workers	115/3*2*8	613
Reassembly of the lintels (including shoring work)			
Straight	1 day at 2 workers per	36*2*8	576
Slightly arched	2 days at 2 workers per	14*2*2*8	448
Full arched	3 days at 2 workers per	4*3*2*8	192
Reassembly of the south and north pediments	10 days at 3 workers per	10*3*8*2	480
Reassembly of the north entry with columns	15 days at 3 workers	15*3*8	360
Reassembly of the extérieurs stairs on the south and north facades			
Stones steps	10 ml per day for 2	150/10*2*8	240
Stair railing	10 ml per day for 2	20/10*2*8	32
Repainting of the stone for all facades	20 m ² per day for 2	300/20*2*8	240
	Total hours workers =	Hours	11642
	Company hourly cost	€	65 €/h
Total cost estimate	Total cost =	€	741130
	Round value	€	742000

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - Reassembly of Stones - January 2023						
Estimate different materials for reassembly of the stones						
Basis of calculation : Plans Autocad dated december 2022						
materials	detail of calculation					
	concern	% of total stones	Number on stones	total volume of news stones	price of m3	total cost estimate
			U	m3	€/m3	€
new stones to replace damaged ones	10% of the total number of façades stones	2952*10%	295	87	1600	139,712.00
		% of total stones	Number on stones	total volume of mortar	price of m3	total cost estimate
lime and sand mortar for sealing and stone joints	100% of the total of stones	100%	4620	13.675	400	5,470.08
Total cost estimate of materials				Total =		145,182.08
				rounded value		145,200.00

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - Reassembly of Stones - January 2023	
Estimate of the total cost of reassembling stones	
Basis of calculation : Plans Autocad dated december 2022	
Recap	€ (excluding tax)
Cost reassembly stones by workers	742,000.00
Cost materials	145,200.00
Cost management	200,000.00
Total cost estimate reassembly stones (excluding tax)	1,087,200.00
Round value	1,088,000.00

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

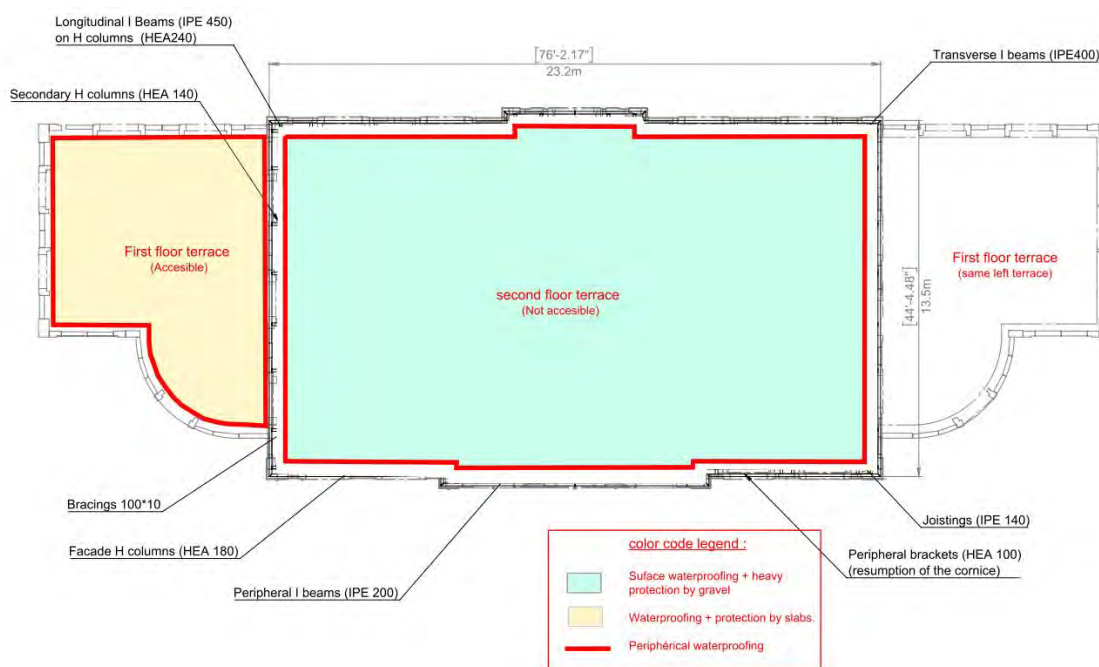
Roof terraces

The building will be covered by accessible (first level) and non-accessible (upper level) flat roofs. The waterproofing of these roofs is ensured by flexible membranes placed on thermal insulation panels.

The accessible terraces on the first level are protected with slabs on blocks.

The non-accessible terrace at the upper level is protected by gravel.

Plans for the roof terraces (05b) are on pages 60 through 71.



The cost estimate of the roof terraces is: 88 000 € (excluding tax).

Waterproofing terraces not accesible (top floor)			
		Subtotal 1 (€) =	45 920,00
Waterproofing terraces accesible (Second floor terraces)			
		Subtotal 2 (€) =	41 710,00
		Subtotal 1 + 2 = (€ excluding tax)	87 630,00
	Total estimate all terraces	Round value	88 000,00

Spreadsheet with calculations is on page 72.

RECONSTRUCTION OF THE CHATEAU - 05b
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

BORDEAUX CHATEAU

Reconstruction on metal structure

Detailed location of the flat roof (insulation and waterproofing complex) based on the plans of Studio Cèdre -
 January 2023 - DMB Construction durable

Feasibility study



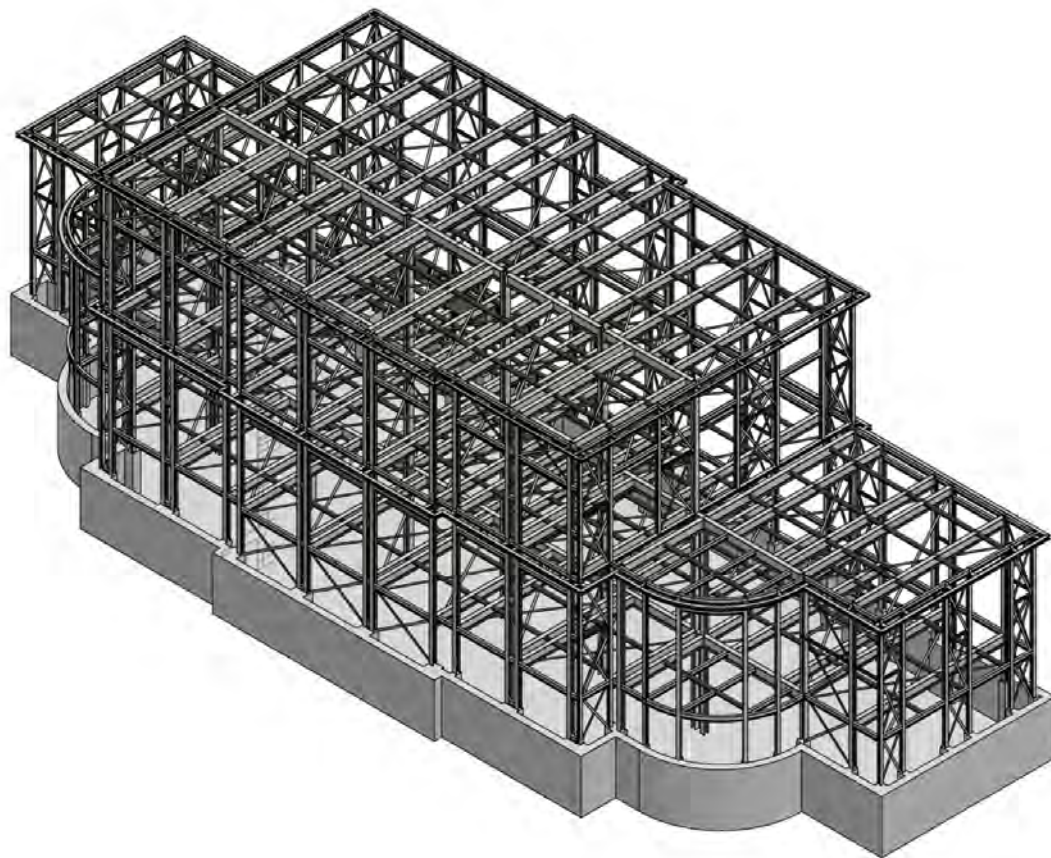
SOUTH FAÇADE



NORTH FAÇADE

Studio Cèdre Bureau d'étude Structure et Conception contact@studiocedre.fr 06 89 44 77 33	<i>Maitre d'ouvrage:</i>	<i>Maitre d'oeuvre:</i>	<i>Entreprise:</i>	Bordeaux Chateau Metal structure	Phase	SC_REBC_PLN	00
	Ailsanne Wonderland 49 rue de Seine 75006 Paris				Plan book	FAISA	A3

RECONSTRUCTION OF THE CHATEAU - 05b
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
(VALUE JANUARY 2023)



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75006 Paris

Maitre d'oeuvre:

Entreprise:

Bordeaux Chateau
Metal structure

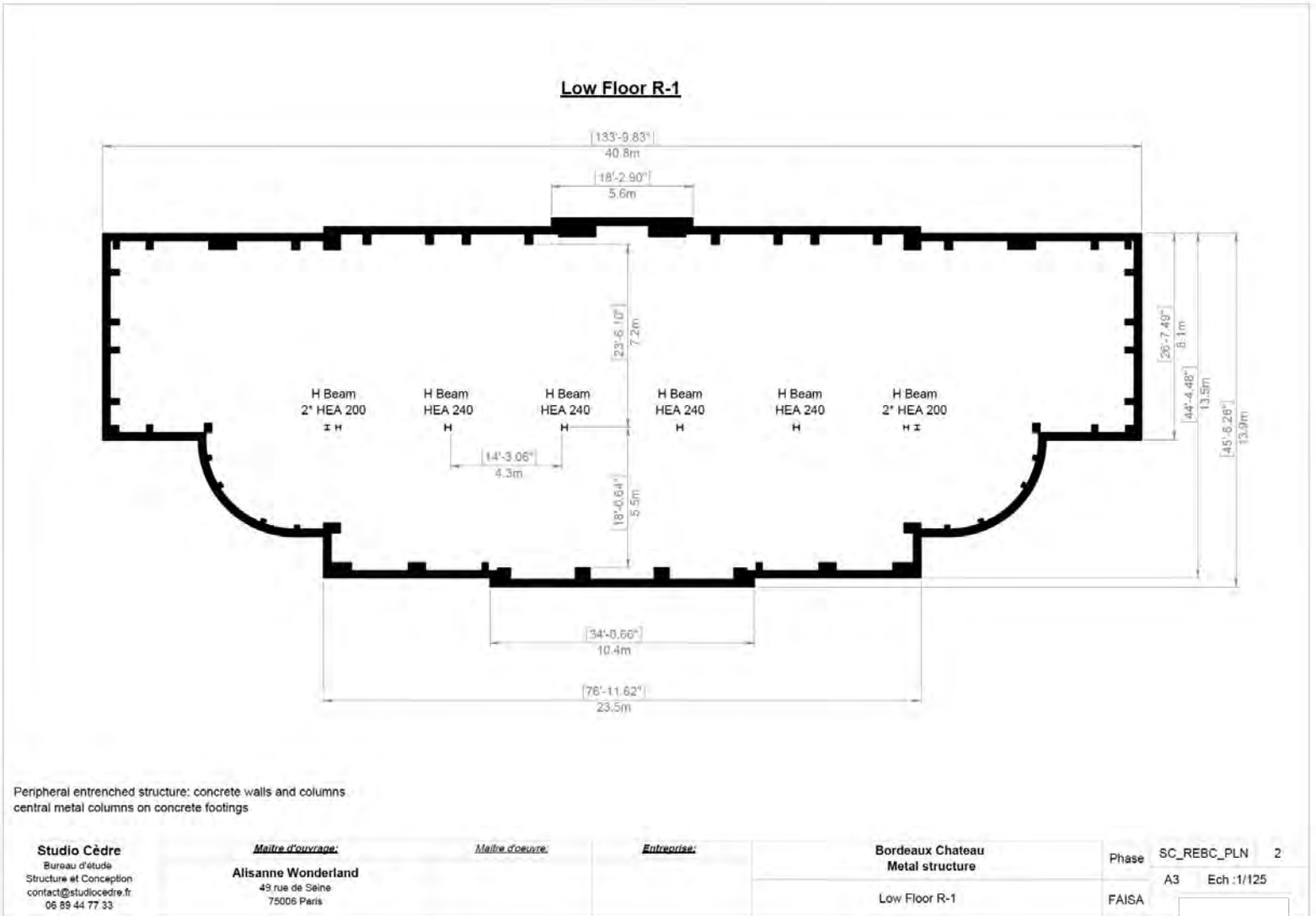
Perspective

Phase SC_REBC_PLN 1
A3 Ech :1/125
FAISA

RECONSTRUCTION OF THE CHATEAU - 05b

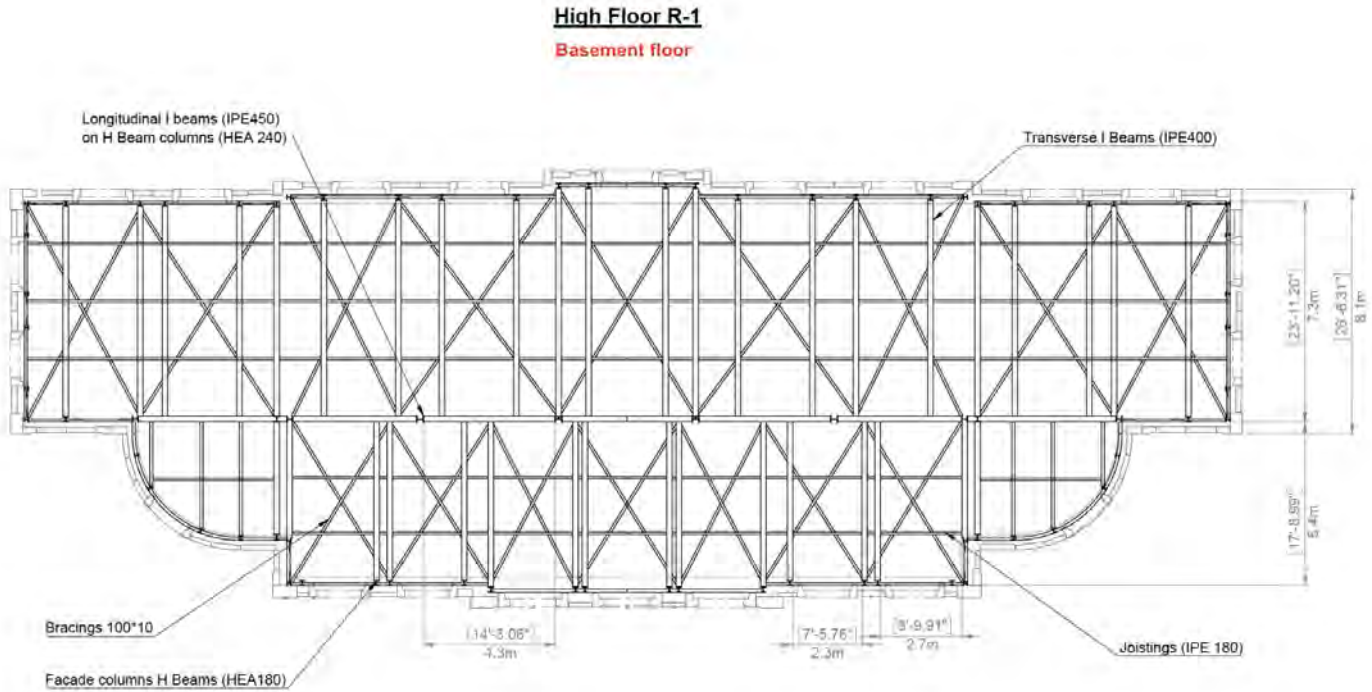
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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Plancher Bas R-1

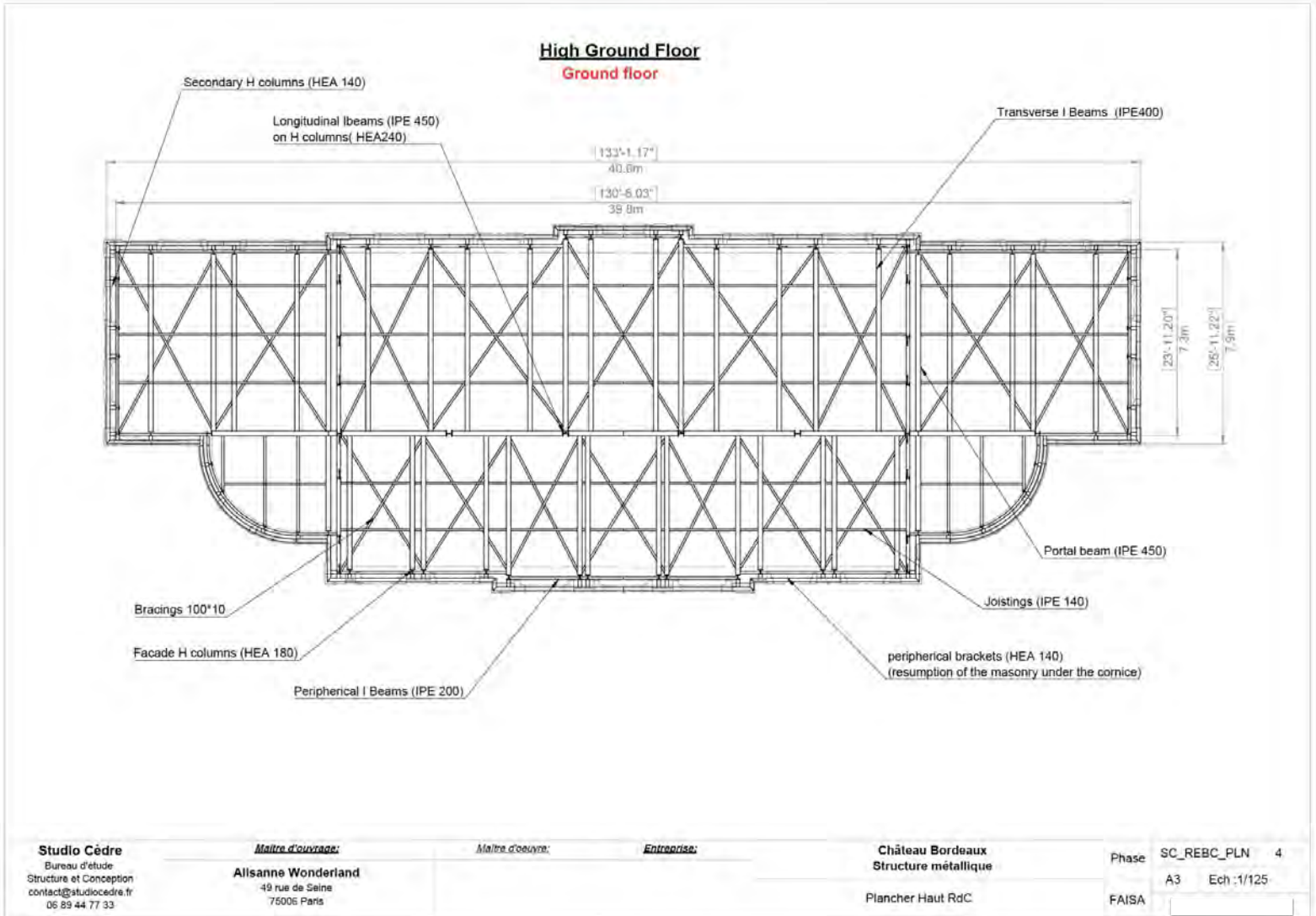
Phase SC_REBC_PLN 3

A3 Ech :1/125

FAISA

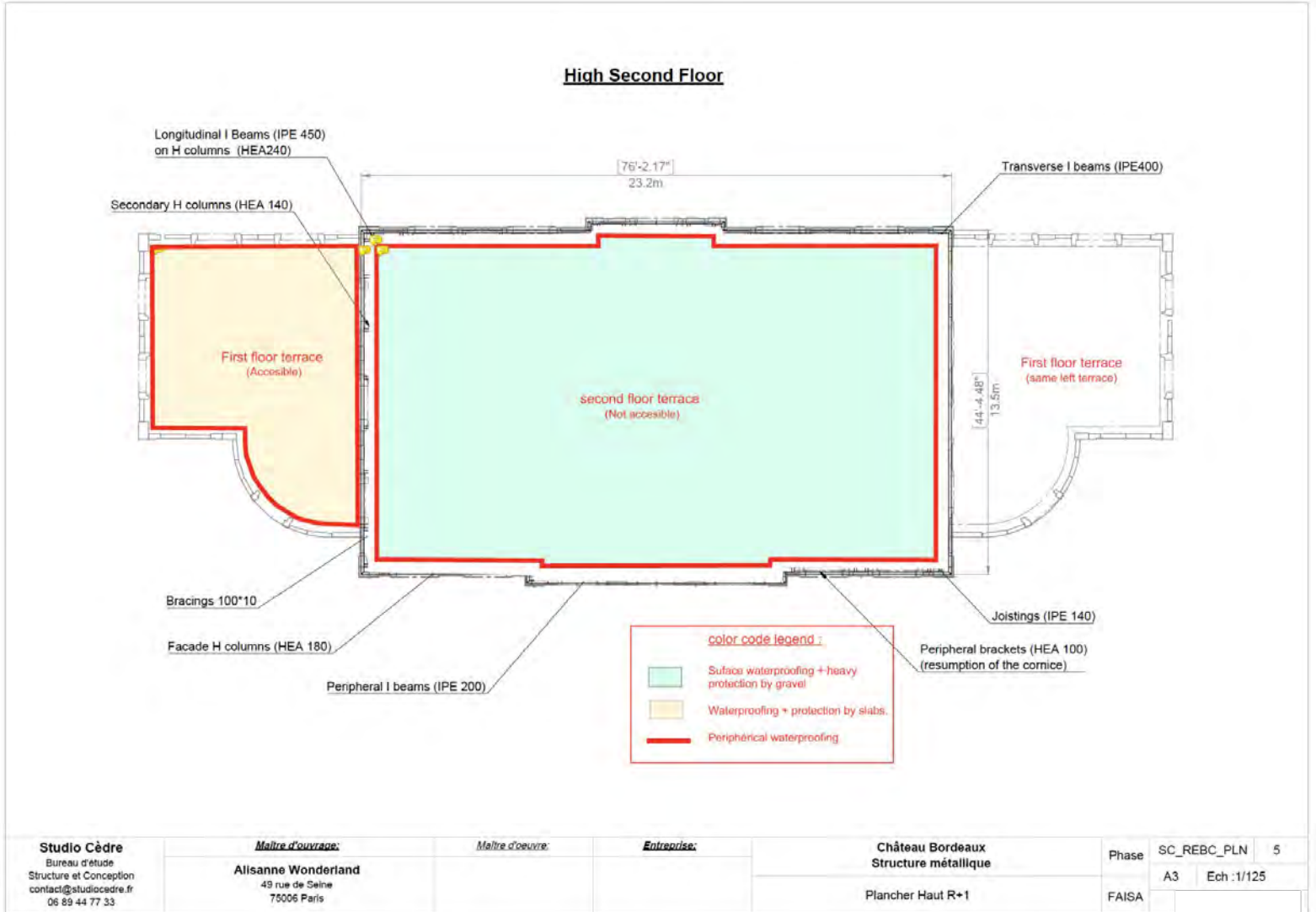
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(VALUE JANUARY 2023)



EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

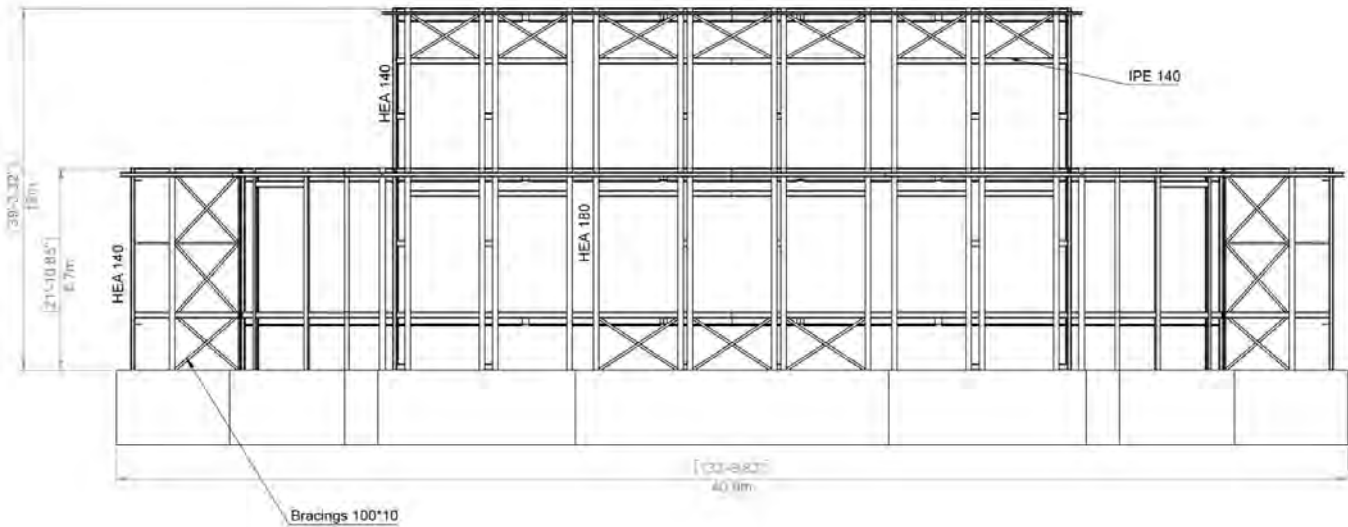


RECONSTRUCTION OF THE CHATEAU - 05b

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

South Facade



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Entreprise:

Château Bordeaux
Structure métallique

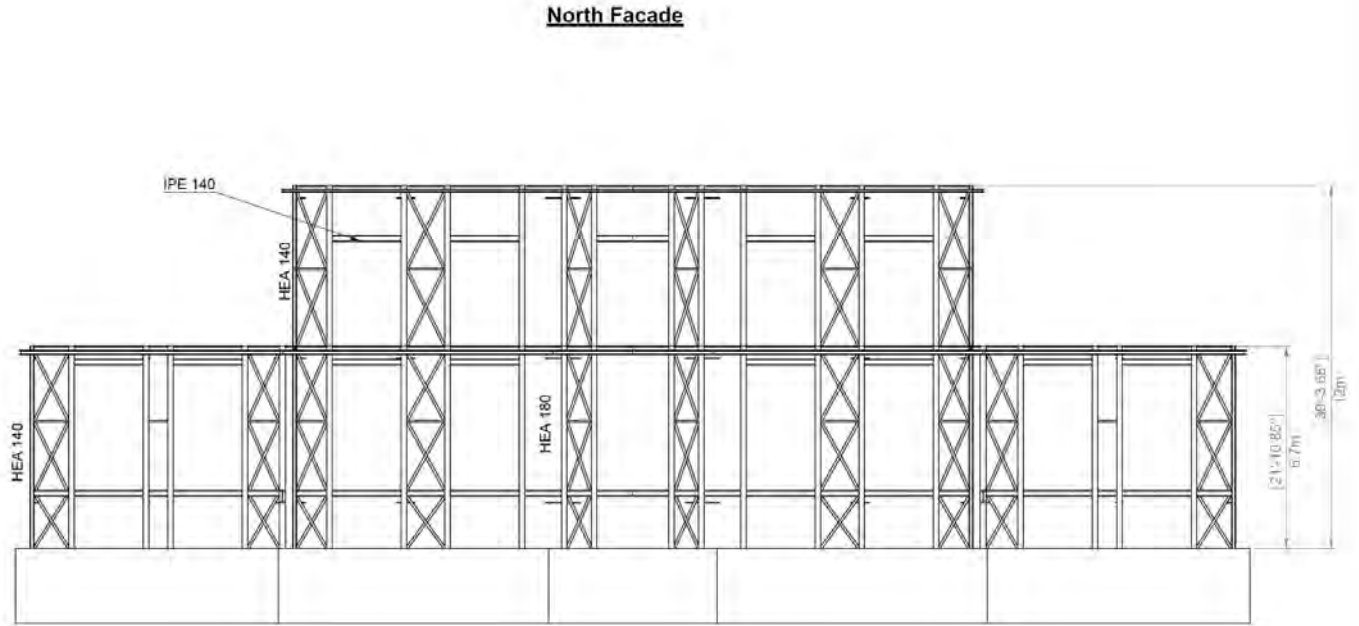
Vue Façade Sud

Phase SC_REBC_PLN 6
A3 Ech :1/125
FAISA

RECONSTRUCTION OF THE CHATEAU - 05b

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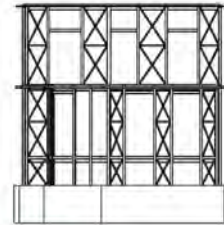
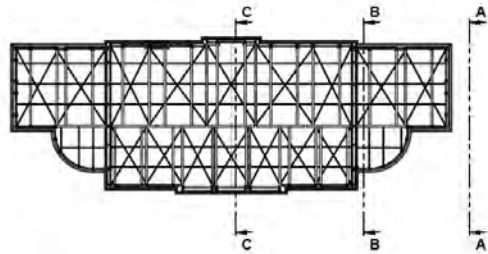
Château Bordeaux
Structure métallique

Vue Façade Nord

Phase SC_REBC_PLN 7
A3 Ech. 1/125
FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

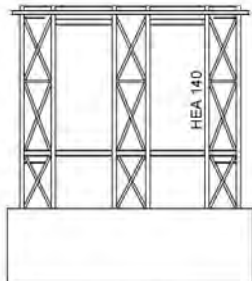
(VALUE JANUARY 2023)



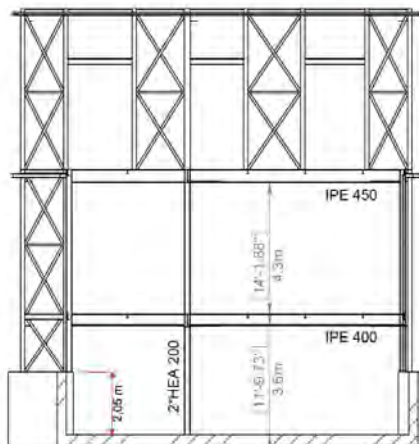
Side view

color code legend :

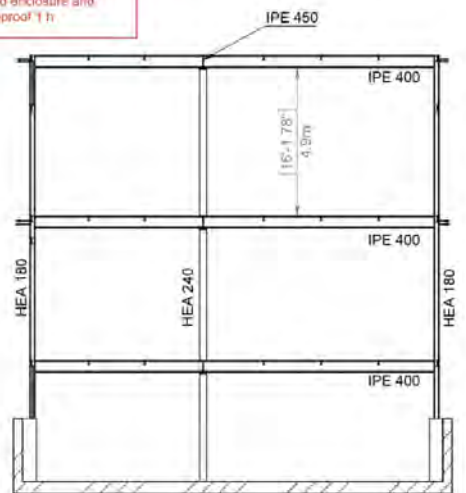
- Plasterboard ceiling fireproof 1 h
- Plasterboard enclosure and dubbing fireproof 1 h



Section A-A



Section B-B



Section C-C

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Maitre d'oeuvre:

Entreprise:

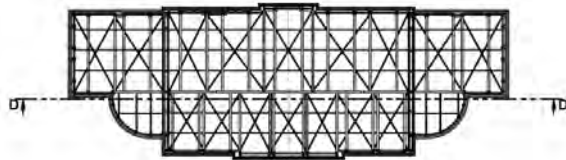
Château Bordeaux
Structure métallique

Coupes transversales

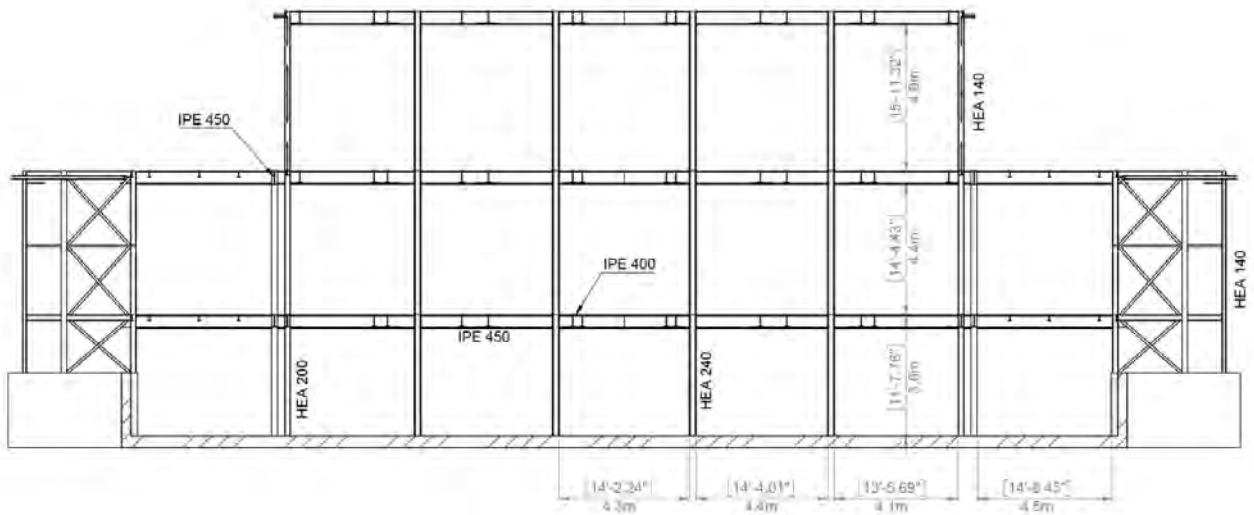
Phase	SC_REBC_PLN	8
	A3	Ech :1/125
FAISA		

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)



Longitudinal Section



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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupe longitudinale

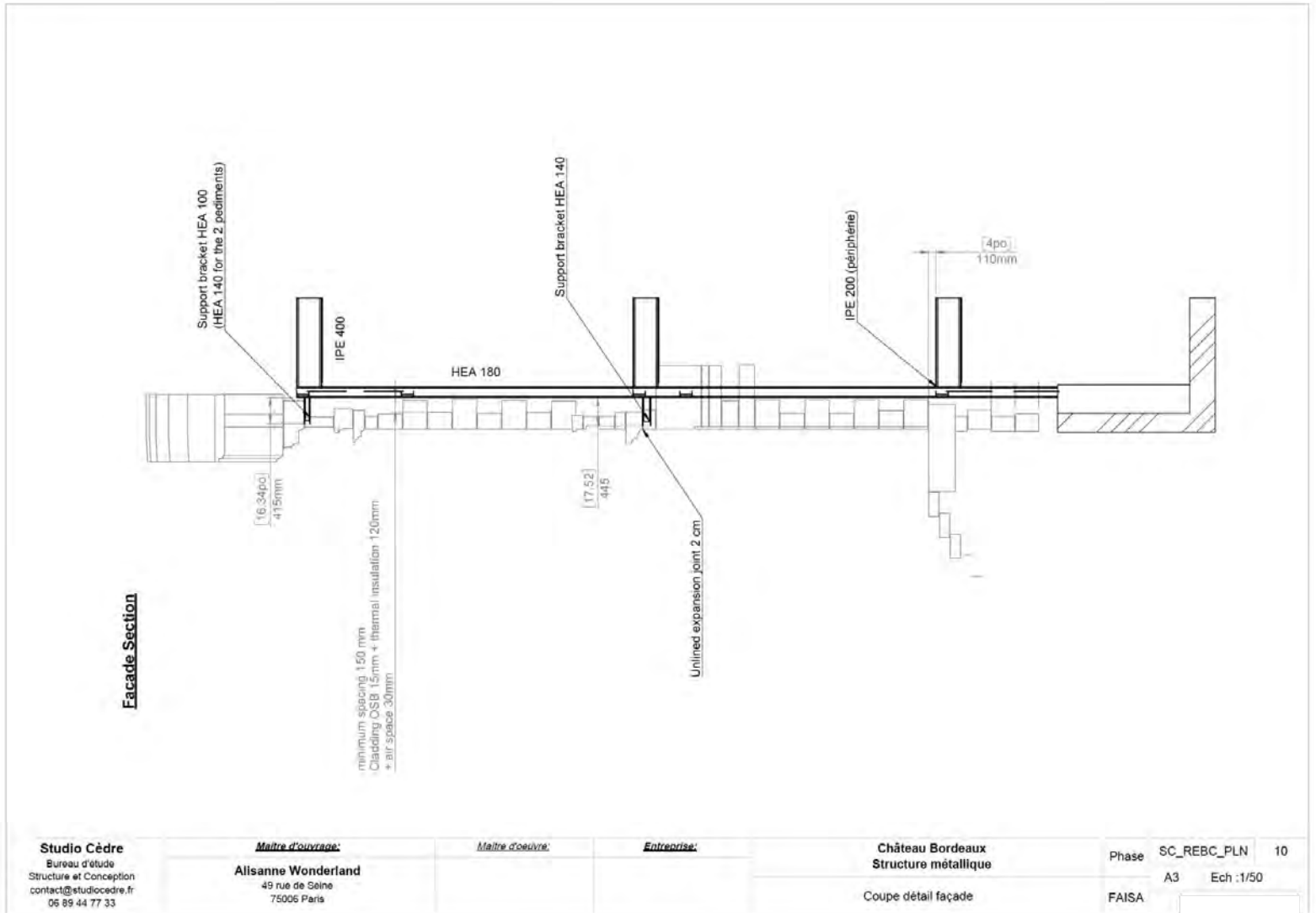
Phase SC_REBC_PLN 9

A3 Ech. 1/125

FAISA

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

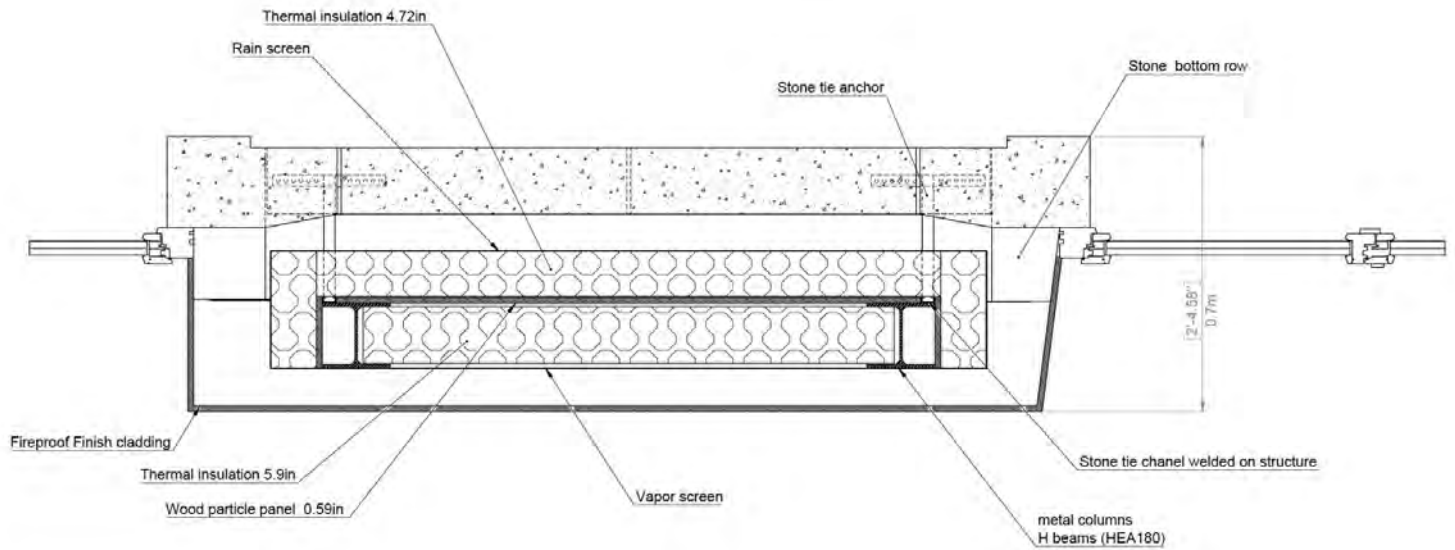
(VALUE JANUARY 2023)



EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Facade Section



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Maitre d'oeuvre:

Entreprise:

Château Bordeaux
Structure métallique

Coupe détail façade

Phase SC_REBC_PLN 10

A3 Ech :1/10

FAISA

RECONSTRUCTION OF THE CHATEAU - SPREADSHEET
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Bordeaux Chateau - waterproofing terrace - Detail of calculation by type of element - January 2023

Basis of calculation : Plans file Studio Cèdre dated 30/11/2021

Waterproofing terraces not accessible (top floor)

Floor	Element or material	Quantity	Unit price	result
		m ² or ml	€/m ²	€
Top floor terrace	Thermal Insulation	278	35	9,730.00
	Surface waterproofing	278	80	22,240.00
	Protection by gravel	278	25	6,950.00
	Peripheral waterproofing	70	100	7,000.00
		Subtotal 1 (€) =		45,920.00

Waterproofing terraces accessible (Second floor terraces)

Floor	Type or material	Quantity	Unit price	result
		m ² or ml	€/m ²	€
First floor terraces	Thermal Insulation	146	35	5,110.00
	Surface waterproofing	146	80	11,680.00
	Protection by slabs	146	120	17,520.00
	Peripheral waterproofing	74	100	7,400.00
		Subtotal 2 (€) =		41,710.00

		Subtotal 1 + 2 = (€ excluding tax)		87,630.00
	Total estimate all terraces	Round value		88,000.00

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
(VALUE JANUARY 2023)

Exterior Doors and Windows

Window bays are closed with glass doors and windows according to the original design.
The cost estimate of the doors window and windows is: 205 000 € (excluding tax).

Spreadsheet with calculations is on the following page (page 74).

EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY

(VALUE JANUARY 2023)

Bordeaux Chateau - Exterior doors and windows - Detail of calculation by type of element - January 2023											
Basis of calculation : AutoCad plans											
Aeras calculation											
Floor	type of windows	South facade		North facade		East facade		West facade		All facades	
		calculation detail	s.total 1	calculation detail	s.total 2	calculation detail	s.total 3	calculation detail	s.total 4	TOTAL aeras	
		m	m ²	m	m ²	m	m ²	m	m ²	m ²	m ²
Basement floor	Windows	1,3*0,9*4	4.68	1,3*0,9*8	9.36	1,3*0,9*1	1.17	1,3*0,9*1	1.17	16.38	
	Windows	1,45*2,68*4	15.54	1,45*2,68*6	23.32	1,45*2,68*3	11.66	1,45*2,68*3	11.66	62.18	
Ground floor	Doors windows	1,5*3,68*3	16.56	1,5*3,68*1	5.52					22.08	
First floor	Windows	1,4*2,67*7	26.17	1,4*2,67*4	14.95	1,4*2,67*2	7.48	1,4*2,67*2	7.48	56.07	
	Doors windows			1,47*3,15	4.63	1,3*3,51	4.56	1,3*3,51	4.56	13.76	
										TOTAL area (m²) =	170.46
										Round value (m²)	170.50
Cost estimate exterior doors window and windows											
	Total area (m ²)	170.50									
	Estimate price per sqm (€/m ²)	1,200.00									
	Total cost estimate = (€)	204,600.00									
	Round Value (€)	205,000.00									

RECONSTRUCTION OF THE CHATEAU
EUROPEAN PRICES AND STANDARDS OF CONSTRUCTION ONLY
 (VALUE JANUARY 2023)

Summary and Conclusion

The total cost estimate of reconstruction is: \$3,282,000 (excluding tax)

Château Bordeaux - Alisane Wonderland - Recapitulation cost of reconstruction - January 2023		
		(Excluding tax)
1	Concrete structure	310 000,00 €
2	Metallic structure	616 000,00 €
3	Fire stability of metal structure	216 000,00 €
4	Reassembly stones	1 088 000,00 €
5	Roof terraces	88 000,00 €
6	Doors window and windows	205 000,00 €
	Sub total lines 1 to 6 =	2 523 000,00 €
	Site installation, lifting équipement, scaffolding ... (10%)	252 300,00 €
	10% for contingencies	252 300,00 €
	Total récapitulation cost of rebuilt with contingencies (€) =	3 027 600,00 €
	Conversion into US dollar (value of 20/01/2022) (\$)	3 281 510,00 (\$)
	Rounded value (\$)	3 282 000,00 (\$)