

BENIDORM MODEL ECISA EXPERIENCE



ECISA
CIA.GENERAL DE
CONSTRUCCIONES

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BENIDORM



ECISA EXPERIENCE



DIFFERENT STRUCTURAL DESIGN CRITERIA.
TWO TYPES OF HIGH RISE BUILDING.

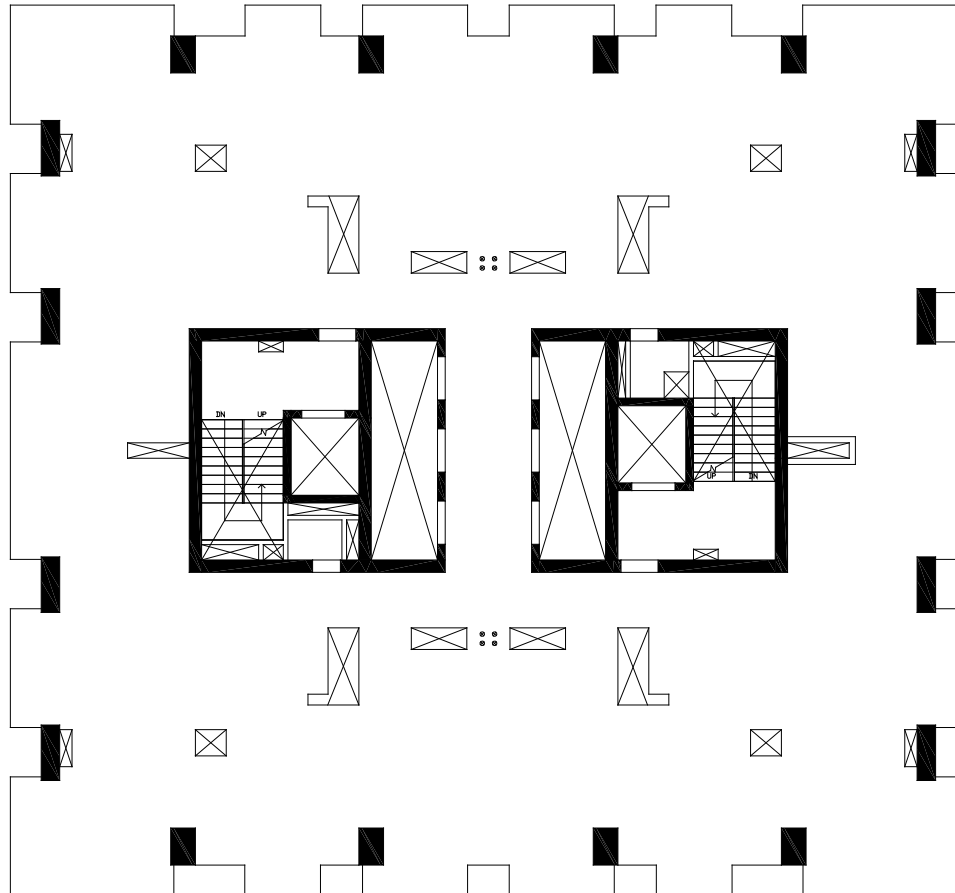


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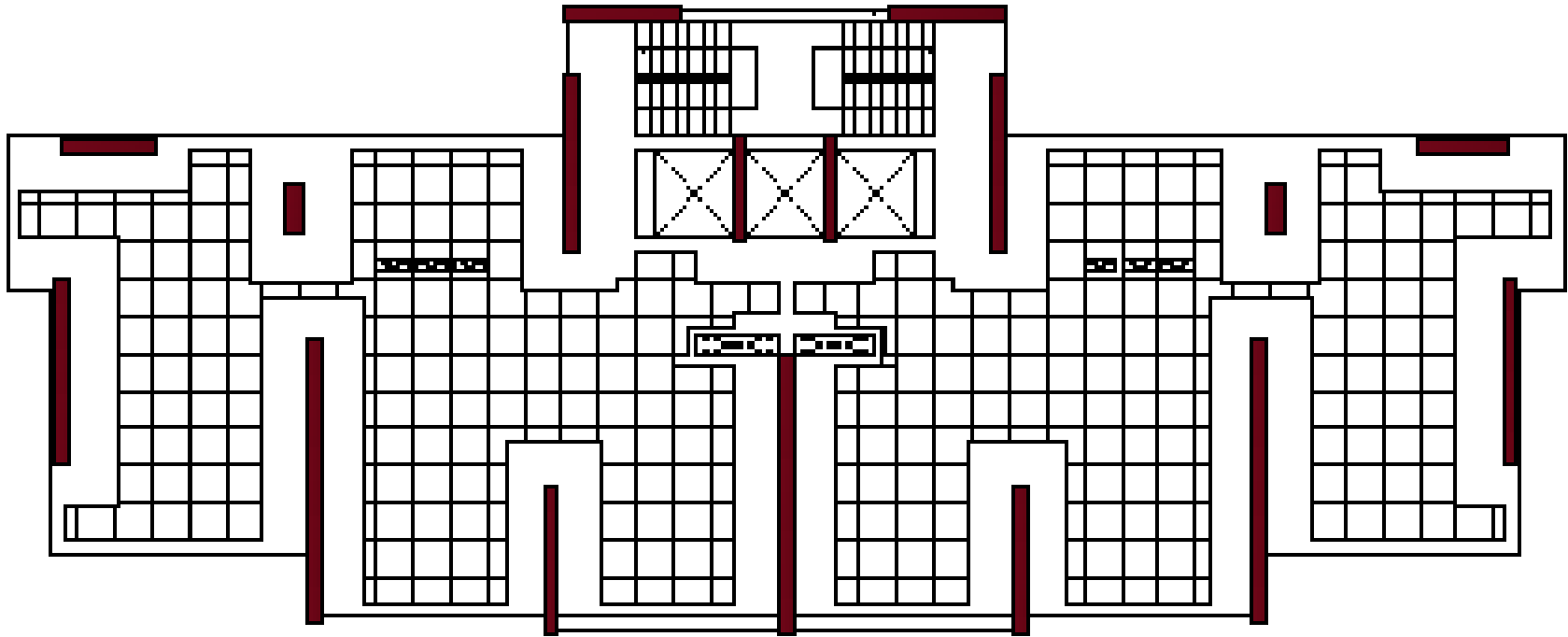


COLUMNS & SLABS



**TYPE A:
WITH CENTRAL CORE
REINFORCEMENT:
60 KG/M²
CONCRETE: 100 L/M²
FORMWORK: SELF CLIMBING
OR TIME CONSUMING**

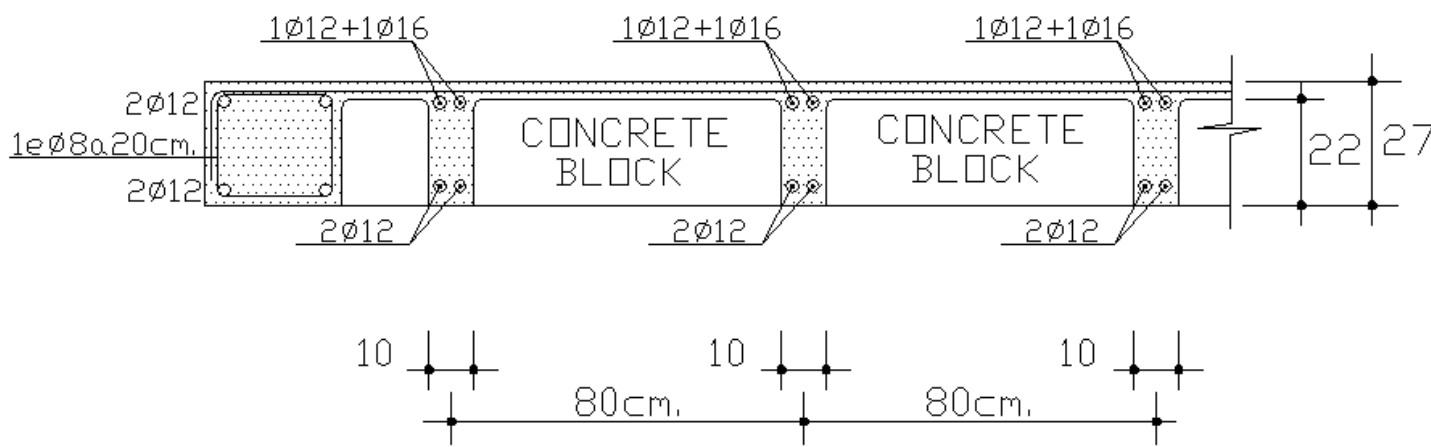
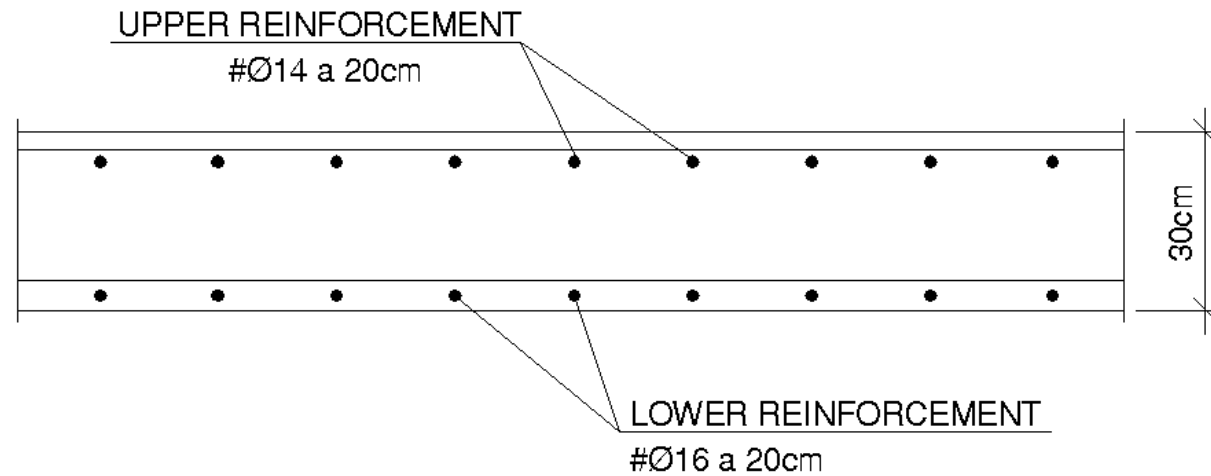
COLUMNS & SLABS



**TYPE B : WITHOUT
CENTRAL CORE
REINFORCEMENT : 37
KG/M2
CONCRETE : 390 L/M2
FORMWORK: SIMILAR TO
COLUMNS.**

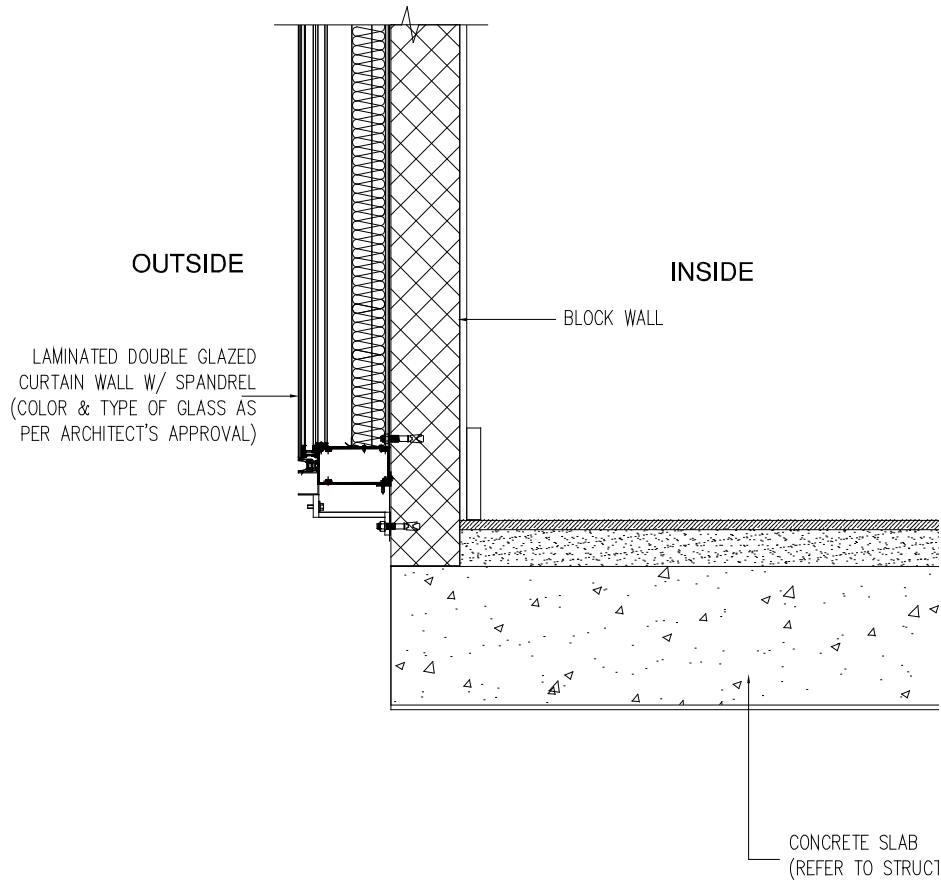


TYPE A

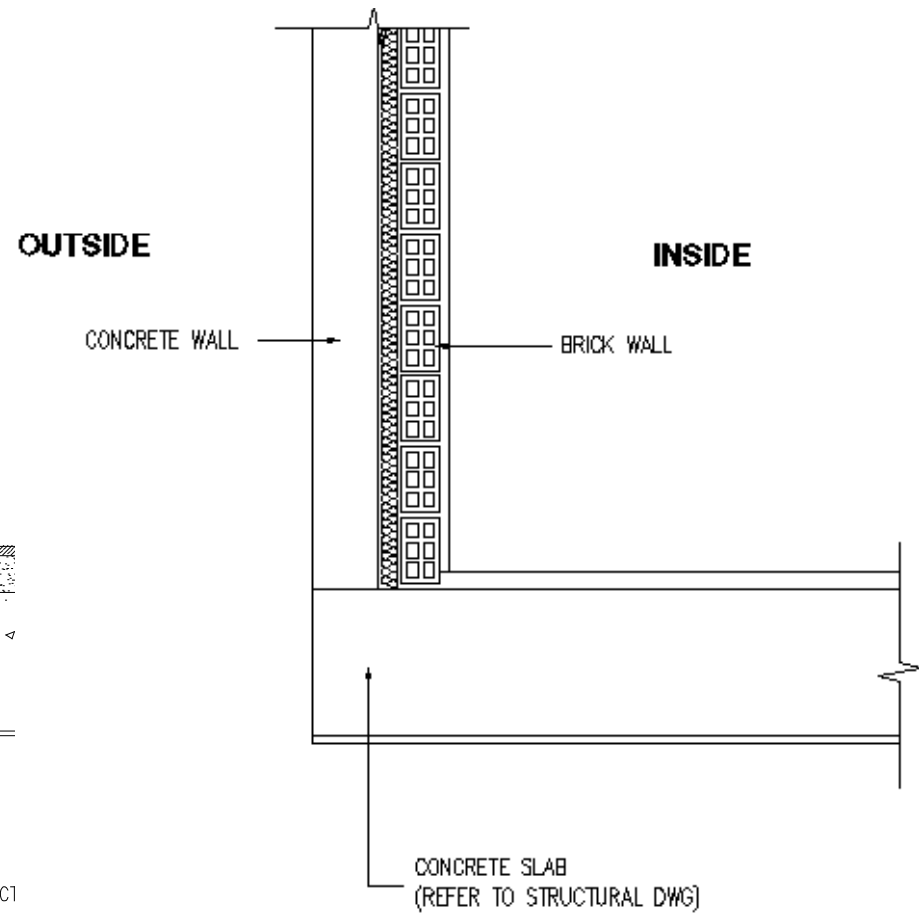


TYPE B





FAÇADE TYPE A



FAÇADE TYPE B



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THERMAL TRANSMISSION COEFFICIENT OF FAÇADES

TYPE A

FACADE ENCLOSURE 100%
CURTAIN WALL.

$K = 2,5 \text{ W/m}^2 \text{ K}$

TYPE B

REINFORCED CONCRETE
ENCLOSURE

15%

$K = 0,3277 \text{ W/m}^2 \text{ K}$

DOUBLE CLAD ENCLOSURE

65%

$K = 0,3169 \text{ W/m}^2 \text{ K}$

ALUMINIUM FRAME WITH GLASS

20%

$K = 2,46 \text{ W/m}^2 \text{ K}$

AVERAGE COEFFICIENT

$K = 0,7751 \text{ W/m}^2 \text{ K}$

ENERGY REQUIREMENTS

ENCLOSURE	SOLUTION A		SOLUTION B	
	KCAL	COST €	KCAL	COST €
HOUSING	92.370,40 -KCAL/HOUR	45.744	42.097,00 -KCAL/HOUR	22.872 €
COMMERCE (HOTELS, OFFICES)	96.977,80 -KCAL/HOUR	86.382	46.894,70 -KCAL/HOUR	41.116 €

- HOUSING COST DIFFERENCE **43,56 €/m²**
- COMMERCE COST DIFFERENCE **86,22 €/m²**

ANNUAL AIRCON CONSUMPTION HOUSING

- Therefore taking 8 hours aircon usage per day for 180 days, which is 1.440 hours, we get the following annual cost:

ENCLOSURE / USE	SOLUTION A	SOLUTION B
ELECTRICITY CONSUMPTION	47.865,60 kWh	23.932,80 kWh
TOTAL COST	5.491,62 €	2.745,78 €

ANNUAL AIRCON CONSUMPTION COMMERCE

- Therefore taking 8 hours aircon usage per day for 180 days, which is 1.440 hours, we get the following annual cost:

ENCLOSURE / USE	SOLUTION A	SOLUTION B
ELECTRICITY CONSUMPTION	67.940,00 kWh	34.380,00 kWh
TOTAL COST	8.245,13 €	4.172,32 €

SUMMARY



ECISA EXPERIENCE

	BENIDORM TYPE BUILDING						CENTRAL CORE TYPE BUILDING						DEFICIT €
	QUANTITY		SURFACE AREA		UNIT PRICE €	TOTAL €	QUANTITY		SURFACE AREA		UNIT PRICE €	TOTAL €	
SLAB CONCRETE	0,25	m ³ /m ²	525	m ²	65,00	8.531,25	0,31	m ³ /m ²	525	m ²	65,00	10.578,75	-2.047,50
COLUMNS CONCRETE	0,14	m ³ /m ²	525	m ³	65,00	4.879,88	0,08	m ³ /m ²	525	m ²	65,00	2.798,25	2.081,63
STEEL IN SLAB	18,10	Kg/m ²	525	m ²	1,10	10.452,75	61,00	Kg/m ²	525	m ²	1,10	35.227,50	-24.774,75
STEEL IN COLUMNS	18,85	Kg/m ²	525	m ²	1,10	10.885,88	21,11	Kg/m ²	525	m ²	1,10	12.191,03	-1.305,15
BREEZE BLOCK	3,80	Ud/m ²	525	m ²	0,80	1.596,00	0,00	Ud/m ²					
FAÇADE									300	m ²	250,00	75.000,00	-75.000,00
Concrete	16,00	%	300	m ²	40,00	1.920,00							1.920,00
Masonry	67,00	%	300	m ²	70,00	14.070,00							14.070,00
Aluminium/Glass	17,00	%	300	m ²	160,00	8.160,00							8.160,00
Air conditioning units			1	Ud	22.872	22.872,00			1		45.744	45.744,00	-22.872,00
TOTAL						83.367,75						181.539,53	-99.767,78





**Thank
you**