



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Departament d'Enginyeria de Projectes
i de la Construcció

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Departament d'Enginyeria de Projectes i de la
Construcció

Project of parking design with metal
structure with class 4 profiles for electric
vehicles and use of solar energy

BUDGET

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BUDGET

To calculate the budget, I will do it for phases:

1. Cost for the design model and engineering requirements
2. Material
3. Execution of the physical structure
4. Installation for solar panels
5. Installation the security System and ventilation

Cost for the design model and engineering requirements

First of all, I will start to calculate the cost for the engineers that works in this project. For his work I will pay 30 euros per hour and I suppose that they work on it 450 hours/engineer. I don't calculate any diet or travel because I suppose that him will work in his office.

DESIGN CONSTRUCTION AND ENGINEERING REQUIREMENTS

Engineer Model

1

Departure	Technicians	Hours / technician	Days	Total hours	price/hour	Price/day	Cost
Hour of Work	3	450		1350	30,00 €		40.500,00 €
Travel hours				0	30,00 €		0
Diets			56,25			34,50 €	- €
Accommodation			56,25			60,00 €	- €
Displacement						500,00 €	- €
Subtotal							40.500,00 €
Uds							1
Total 2							40.500,00 €

Materials

In this phase I will calculate the approximate cost for the material of the steel and all the beams/pilars and joins that I would need in this project. If I consider that the price for kg of galvanized steel is approximate of 5,75 €/kg and I have 223 beams/pilars in each floor then I will need 446 beams.

Number of Beams/Pilars	Weight for beam	Total kg	€/kg	COST
446	20,65	9209,9	5,75	52.956,93 €

I need to consider also the solar panels and the ventilations (fans, jet fans, conducts...)

Material	Units	Price for each	COST
SOLAR PANELS	1891	162,35 €	307.003,85 €
VENTILATION	1	60.000,00 €	60.000,00 €

In other hand I also want to consider the electric cars to know with what time I can amortize the installation but, I will consider this fact as an optional and is for that reason that this price will not appear in the final summary or final budget.

Electric car	Price for each car	COST
150	20000	3.000.000,00 €

Execution of the physical structure

In this case I suppose that the workers need 42 weeks to finish the structure and all they need to do the Car Park

EXECUTION OF THE PHYSICAL STRUCTURE

Instalation

1

Departure	Technicians	Hours / technician	Days	Total hours	price/hour	Price/day	Cost
Hour of Work	45	231		10395	25,00 €		259.875,00 €
Travel hours	45	42		1890	30,00 €		56.700,00 €
Diets	45		21			34,50 €	32.602,50 €
Accommodation			21			60,00 €	- €
Displacement						500,00 €	- €

Subtotal	349.177,50 €
Uds	1

Total 3	349.177,50 €
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Installation for solar panels

In this case I will calculate the price for install all the solar panels that appear in this project.

SOLAR PANELS

Instalations

1

Departure	Technicians	Hours / technician	Days	Total hours	price/hour	Price/day	Cost
Hour of Work	4	220		880	25,00 €		22.000,00 €
Travel hours				0	25,00 €		0
Diets	2		20			35,00 €	1.400,00 €
Accommodation	2		20			60,00 €	2.400,00 €
Displacement	2					500,00 €	1.000,00 €

Subtotal	26.800,00 €
Uds	1

Total 1	26.800,00 €
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Installation for ventilation

In this case I will calculate the price for install all the ventilation for this project.

INSTAL THE SECURITY SYSTEM AND VENTILATION

Instalations

1

Departure	Technicians	Hours / technician	Days	Total hours	price/hour	Price/day	Cost
Hour of Work	3	176		528	25,00 €		13.200,00 €
Travel hours	3	2		6	25,00 €		150
Diets			16			34,50 €	- €
Accommodation			16			60,00 €	- €
Displacement	1					500,00 €	500,00 €

Subtotal	13.850,00 €
Uds	1

Total 3	13.850,00 €
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Summary

Finally, I will do a summary to know the specific price that will cost this structure and the final budget will be about 855.066,31 € but if I subcontract this job the price that I will need to pay for installation would be the total net price because the company needs to win something in the process.

SUMMARY								
Departure	Technicians	Days of all the technician	Total hours for all the technician	price/hour (cost)	price/hour (facturation)	Preu/dia	Cost	TOTAL NET (for compapny)
Hour of Work	55		13153	25,00 €	35 €		328.825,00 €	460.355,00 €
Travel hours	48		1896	25,00 €	35 €		47.400,00 €	66.360,00 €
Diets	47	985				34,50 €	33.982,50 €	42.478,13 €
Accommodation	2	40				60,00 €	2.400,00 €	3.000,00 €
Displacement	3					500,00 €	1.500,00 €	1.875,00 €
Material							419.960,78 €	524.950,97 €
Transport							20.998,04 €	26.247,55 €
Total							855.066,31 €	1.125.266,64 €

OPTIONALS								
Electric car							3.000.000,00 €	3.750.000,00 €