

# Archetypes of building stock in Spain (Catalonia)

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## Archetypes definition for Spain (Catalonia)

Table 1. Construction period ranges (Catalan Region)

CP1	CP2	CP3	CP4	CP5	CP6
≤ 1900	1901-1936	1937-1960	1961-1980	1981-2006	> 2007

Table 2. Building use categories considered (Catalan region)

Intended use	Bldg type	Description
Residential	SFH	Single-family houses
	AB	Building units in multi-family houses or apartment blocks
Non-residential	TRY	Tertiary buildings such as offices, hospitals, hotels, ...

Table 3. Building typology matrix (Catalan region)

		CP1	CP2	CP3	CP4	CP5	CP6
		≤ 1900	1901-1936	1937-1960	1961-1980	1981-2006	> 2007
B3	AB				B3_RES_AB_CP4	B3_RES_AB_CP5	
C2	AB	C2_RES_AB_CP1	C2_RES_AB_CP2	C2_RES_AB_CP3	C2_RES_AB_CP4	C2_RES_AB_CP5	C2_RES_AB_CP6
	SFH			C2_RES_SFH_CP3	C2_RES_SFH_CP4	C2_RES_SFH_CP5	C2_RES_SFH_CP6
	TRY			C2_TRY_CP3	C2_TRY_CP4	C2_TRY_CP5	
C3	AB				C3_RES_AB_CP4	C3_RES_AB_CP5	
	SFH					C3_RES_SFH_CP5	
D2	AB				D2_RES_AB_CP4	D2_RES_AB_CP5	
D3	AB				D3_RES_AB_CP4		



# Archetypes of building stock in Spain (Catalonia)

Table 4. Archetype - residential building (AB), climatic zone B3 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - B3_RES_AB_CP4						
	Data	Symbol	Unit of measure	Median	( $Q_3 - Q_2$ )	( $Q_2 - Q_1$ )
Geometry	Compactness ratio	$CR$	$m^{-1}$	2,980	1,280	1,390
	Thermally heated gross volume	$V_{H;g}$	$m^3$	180	60	58
	Thermally heated floor area	$A_{H;use;ztc}$	$m^2$	70	23	22
	Transparent thermal envelope area on thermal envelope area	$A_{wi}/A_{env}$	%	20	10	4
Envelope	Mean thermal transmittance of opaque building envelope	$U_{op}$	$W/(m^2 \cdot K)$	1,470	0,360	0,220
	Mean thermal transmittance of transparent building envelope	$U_{wi}$	$W/(m^2 \cdot K)$	4,890	0,550	1,090
Technical building system	Energy carrier per space heating	Natural gas = 74%, Electricity = 24%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 42%, Electricity = 51%				
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	0,820	0,520	0,160
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	-	-	-
	Utilisation energy efficiency	$\eta_{H;u}$	-	-	-	-
Energy indicators	Energy need for space heating	$EP_{H;nd;ztc}$	$kWh/m^2$	55,7	19,0	15,5
	Energy need for space cooling	$EP_{C;nd;ztc}$	$kWh/m^2$	16,0	3,6	3,2
	Energy need for domestic hot water	$EP_{W;nd;ztc}$	$kWh/m^2$	61,4	50,6	17,8
	Seasonal space heating energy efficiency	$\eta_{S;H}$	-	-	-	-
	Seasonal space cooling energy efficiency	$\eta_{S;C}$	-	-	-	-
	Seasonal domestic hot water energy efficiency	$\eta_{S;W}$	-	-	-	-
	Non-renewable energy performance per space heating	$EP_{H;nren}$	$kWh/m^2$	75,4	27,7	22,0
	Non-renewable energy performance per space cooling	$EP_{C;nren}$	$kWh/m^2$	-	-	-
	Non-renewable energy performance per domestic hot water	$EP_{W;nren}$	$kWh/m^2$	-	-	-
	Overall non-renewable energy performance	$EP_{gl;nren}$	$kWh/m^2$	147,9	43,6	33,8
	Overall renewable energy performance	$EP_{gl;ren}$	$kWh/m^2$	-	-	-



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Renewable Energy Ratio	<i>RER</i>	%	-	-	-
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Table 5. Archetype - residential building (AB), climatic zone B3 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - B3_RES_AB_CP5						
	Data	Symbol	Unit of measure	Median	( $Q_3 - Q_2$ )	( $Q_2 - Q_1$ )
Geometry	Compactness ratio	<i>CR</i>	$m^{-1}$	2,910	1,880	1,310
	Thermally heated gross volume	$V_{H;g}$	$m^3$	176	48	49
	Thermally heated floor area	$A_{H;use;ztc}$	$m^2$	69	19	19
	Transparent thermal envelope area on thermal envelope area	$A_{wi}/A_{env}$	%	18	5	3
Envelope	Mean thermal transmittance of opaque building envelope	$U_{op}$	$W/(m^2 \cdot K)$	0,970	0,390	0,460
	Mean thermal transmittance of transparent building envelope	$U_{wi}$	$W/(m^2 \cdot K)$	3,780	0,820	0,120
Technical building system	Energy carrier per space heating	Natural gas = 55%, Electricity = 43%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 39%, Electricity = 58%				
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	1,000	0,470	0,280
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	-	-	-
	Utilisation energy efficiency	$\eta_{H;u}$	-	-	-	-
Energy indicators	Energy need for space heating	$EP_{H;nd;ztc}$	$kWh/m^2$	46,4	19,9	14,8
	Energy need for space cooling	$EP_{C;nd;ztc}$	$kWh/m^2$	13,7	3,3	3,1
	Energy need for domestic hot water	$EP_{W;nd;ztc}$	$kWh/m^2$	58,9	47,5	17,4
	Seasonal space heating energy efficiency	$\eta_{S;H}$	-	-	-	-
	Seasonal space cooling energy efficiency	$\eta_{S;C}$	-	-	-	-
	Seasonal domestic hot water energy efficiency	$\eta_{S;W}$	-	-	-	-
	Non-renewable energy performance per space heating	$EP_{H;nren}$	$kWh/m^2$	64,4	28,8	22,1
	Non-renewable energy performance per space cooling	$EP_{C;nren}$	$kWh/m^2$	-	-	-
	Non-renewable energy performance per domestic hot water	$EP_{W;nren}$	$kWh/m^2$	-	-	-
	Overall non-renewable energy performance	$EP_{gl;nren}$	$kWh/m^2$	136,4	43,0	33,3
	Overall renewable energy performance	$EP_{gl;ren}$	$kWh/m^2$	-	-	-
Renewable Energy Ratio	<i>RER</i>	%	-	-	-	



Table 6. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period  $\leq 1900$

CATALAN EPC DATABASE - C2_RES_AB_CP1						
	Data	Symbol	Unit of measure	Median	( $Q_3 - Q_2$ )	( $Q_2 - Q_1$ )
Geometry	Compactness ratio	$CR$	$m^{-1}$	3,100	1,610	1,290
	Thermally heated gross volume	$V_{H;g}$	$m^3$	206	170	71
	Thermally heated floor area	$A_{H;use;ztc}$	$m^2$	72	56	24
	Transparent thermal envelope area on thermal envelope area	$A_{wi}/A_{env}$	%	17	6	5
Envelope	Mean thermal transmittance of opaque building envelope	$U_{op}$	$W/(m^2 \cdot K)$	1,610	0,280	0,240
	Mean thermal transmittance of transparent building envelope	$U_{wi}$	$W/(m^2 \cdot K)$	4,450	0,550	0,670
Technical building system	Energy carrier per space heating	Natural gas = 69%, Electricity = 29%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 55%, Electricity = 40%				
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	0,870	0,450	0,150
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	-	-	-	-
	Utilisation energy efficiency	$\eta_{H;u}$	-	-	-	-
Energy indicators	Energy need for space heating	$EP_{H;nd;ztc}$	$kWh/m^2$	87,6	25,7	22,0
	Energy need for space cooling	$EP_{C;nd;ztc}$	$kWh/m^2$	5,1	2,2	1,8
	Energy need for domestic hot water	$EP_{W;nd;ztc}$	$kWh/m^2$	75,6	36,4	33,6
	Seasonal space heating energy efficiency	$\eta_{S;H}$	-	-	-	-
	Seasonal space cooling energy efficiency	$\eta_{S;C}$	-	-	-	-
	Seasonal domestic hot water energy efficiency	$\eta_{S;W}$	-	-	-	-
	Non-renewable energy performance per space heating	$EP_{H;nren}$	$kWh/m^2$	120,3	37,9	32,5
	Non-renewable energy performance per space cooling	$EP_{C;nren}$	$kWh/m^2$	-	-	-
	Non-renewable energy performance per domestic hot water	$EP_{W;nren}$	$kWh/m^2$	-	-	-
	Overall non-renewable energy performance	$EP_{gl;nren}$	$kWh/m^2$	176,4	53,6	38,4
	Overall renewable energy performance	$EP_{gl;ren}$	$kWh/m^2$	-	-	-
	Renewable Energy Ratio	$RER$	%	-	-	-



Table 7. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period 1901-1936

CATALAN EPC DATABASE - C2_RES_AB_CP2						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,850	1,300	1,070
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	201	196	66
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	70	63	22
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	6	4
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,660	0,230	0,240
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,520	0,480	0,740
Technical building system	Energy carrier per space heating	Natural gas = 73%, Electricity = 27%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 67%, Electricity = 29%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,780	0,540	0,060
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	94,1	26,3	21,3
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	5,4	2,1	1,7
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	80,0	35,0	38,0
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	130,8	40,0	32,1
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	187,9	50,2	40,1
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 8. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period 1937-1960

CATALAN EPC DATABASE - C2_RES_AB_CP3						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,930	1,310	1,180
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	202	132	52
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	73	47	18
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	16	6	4
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,610	0,270	0,240
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,640	0,650	0,860
Technical building system	Energy carrier per space heating	Natural gas = 82%, Electricity = 17%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 72%, Electricity = 23%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,200	0,080
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	91,0	25,4	23,0
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	5,3	2,1	1,6
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	87,1	44,9	37,1
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	129,4	39,9	35,2
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	185,6	50,4	42,4
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 9. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - C2_RES_AB_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,960	1,310	1,190
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	198	336	48
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	75	125	18
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	20	7	5
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,540	0,280	0,220
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,640	0,640	0,860
Technical building system	Energy carrier per space heating	Natural gas = 84%, Electricity = 15%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 77%, Electricity = 17%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,140	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	92,2	25,7	20
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	5,3	1,8	1,5
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	100,0	40,0	50,0
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	132,6	36,5	31,3
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	192,8	45,9	39,7
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-





Table 10. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - C2_RES_AB_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,760	1,850	1,030
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	209	56	44
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	80	21	16
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	5	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,040	0,310	0,540
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,780	0,180	0,240
Technical building system	Energy carrier per space heating	Natural gas = 75%, Electricity = 23%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 71%, Electricity = 26%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,230	0,050
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	77,2	26,9	23,1
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	4,6	2,2	1,9
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	84,0	56,0	30,0
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	115,4	43,0	36,4
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	168,2	48,9	43,4
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 11. Archetype - residential building (AB), climatic zone C2 (Catalonia Region), construction period > 2007

CATALAN EPC DATABASE - C2_RES_AB_CP6						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,760	1,660	1,050
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	190	60	43
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	73	22	17
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	4	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	0,510	0,120	0,100
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,580	0,20	0,180
Technical building system	Energy carrier per space heating	Natural gas = 53%, Electricity = 46%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 50%, Electricity = 49%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,980	0,460	0,210
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	53,8	21,2	19,5
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	5,0	2,8	2,1
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	84,0	28,0	34,5
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	74,7	35,3	31,2
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	124,1	45,3	40,7
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 12. Archetype - residential building (SFH), climatic zone C2 (Catalonia Region), construction period 1937-1960

CATALAN EPC DATABASE - C2_RES_SFH_CP3						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	1,140	0,440	0,230
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	263	126	78
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	96	45	28
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	6	5
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,630	0,250	0,250
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,310	0,690	0,590
Technical building system	Energy carrier per space heating	Natural gas = 68%, Electricity = 15%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 49%, Electricity = 30%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,150	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	139,1	32,2	30,7
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	6,9	3,3	2,3
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	34,8	32,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	202,0	56,5	52,1
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	258,6	65,0	60,5
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 13. Archetype - residential building (SFH), climatic zone C2 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - C2_RES_SFH_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	1,000	0,340	0,190
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	267	125	77
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	100	46	28
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	20	6	4
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,560	0,300	0,250
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,140	0,820	0,530
Technical building system	Energy carrier per space heating	Natural gas = 55%, Electricity = 14%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 38%, Electricity = 30%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,060	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	151,5	35,2	32,8
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	7,7	3,3	2,4
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	38,0	28,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	216,5	59,2	54,6
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	274,9	67,5	63,2
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 14. Archetype - residential building (SFH), climatic zone C2 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - C2_RES_SFH_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	$CR$	$m^{-1}$	1,180	0,430	0,270
	Thermally heated gross volume	$V_{H;g}$	$m^3$	336	107	79
	Thermally heated floor area	$A_{H;use;ztc}$	$m^2$	128	39	29
	Transparent thermal envelope area on thermal envelope area	$A_{wi}/A_{env}$	%	20	5	4
Envelope	Mean thermal transmittance of opaque building envelope	$U_{op}$	$W/(m^2 \cdot K)$	1,160	0,280	0,530
	Mean thermal transmittance of transparent building envelope	$U_{wi}$	$W/(m^2 \cdot K)$	3,780	0,250	0,340
Technical building system	Energy carrier per space heating	Natural gas = 56%, Electricity = 16%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 50%, Electricity = 22%				
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	–	0,770	0,060	0,090
	Mean seasonal efficiency of the heating generation sub-system	$\eta_{H;gn}$	–	-	-	-
	Utilisation energy efficiency	$\eta_{H;u}$	–	-	-	-
Energy indicators	Energy need for space heating	$EP_{H;nd;ztc}$	kWh/m <sup>2</sup>	125,3	33,4	28,7
	Energy need for space cooling	$EP_{C;nd;ztc}$	kWh/m <sup>2</sup>	5,4	2,6	1,8
	Energy need for domestic hot water	$EP_{W;nd;ztc}$	kWh/m <sup>2</sup>	126,0	42,0	26,0
	Seasonal space heating energy efficiency	$\eta_{S;H}$	–	-	-	-
	Seasonal space cooling energy efficiency	$\eta_{S;C}$	–	-	-	-
	Seasonal domestic hot water energy efficiency	$\eta_{S;W}$	–	-	-	-
	Non-renewable energy performance per space heating	$EP_{H;nren}$	kWh/m <sup>2</sup>	183,5	53,2	47,6
	Non-renewable energy performance per space cooling	$EP_{C;nren}$	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	$EP_{W;nren}$	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	$EP_{gl;nren}$	kWh/m <sup>2</sup>	228	60,5	55,1
	Overall renewable energy performance	$EP_{gl;ren}$	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	$RER$	%	-	-	-



Table 15. Archetype - residential building (SFH), climatic zone C2 (Catalonia Region), construction period > 2007

CATALAN EPC DATABASE - C2_RES_SFH_CP6						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	1,260	0,740	0,290
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	380	132	84
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	140	45	30
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	23	7	5
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	0,510	0,120	0,190
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,440	0,340	0,890
Technical building system	Energy carrier per space heating	Natural gas = 46%, Electricity = 38%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 42%, Electricity = 43%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,880	0,710	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	74,4	30,9	38,6
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	6,3	3,9	2,3
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	130,0	38,0	18,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	96,1	53,5	61,5
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	131,7	62,7	75,1
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 16. Archetype - non-residential building (TRY), climatic zone C2 (Catalonia Region), construction period 1937-1960

CATALAN EPC DATABASE - C2_TRY_CP3						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,030	1,050	0,400
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	585	4392	389
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	198	1519	130
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	7	6
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,340	0,310	0,200
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	5,080	0,620	1,110
Technical building system	Energy carrier per space heating	Natural gas = 40%, Electricity = 57%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 24%, Electricity = 73%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	1,410	0,710	0,320
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	84,9	22,3	28,9
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	10,7	10,2	9,3
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	10,0	50,0	10,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	108,7	27,4	40,3
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	208,3	58,9	59,3
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 17. Archetype - non-residential building (TRY), climatic zone C2 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - C2_TRY_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> - Q <sub>2</sub> )	(Q <sub>2</sub> - Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,090	1,030	0,500
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	400	2449	227
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	142	854	80
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	17	10	6
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,260	0,310	0,190
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	5,460	0,240	1,500
Technical building system	Energy carrier per space heating	Natural gas = 44%, Electricity = 55%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 20%, Electricity = 77%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	-	1,410	0,520	0,130
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	-	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	-	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	81,6	25,6	25,3
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	10,6	11,8	9,2
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	11,5	63,5	11,5
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	-	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	-	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	-	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	103,8	37,0	37,6
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	191,8	71,7	51,7
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-





Table 18. Archetype - non-residential building (TRY), climatic zone C2 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - C2_TRY_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,300	1,130	0,670
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	1556	8970	1270
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	502	2558	404
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	17	10	6
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,110	0,220	0,280
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,140	1,560	0,440
Technical building system	Energy carrier per space heating	Natural gas = 29%, Electricity = 70%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 23%, Electricity = 72%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	1,440	0,750	0,140
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	77,3	29,0	26,0
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	16,5	13,0	11,9
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	36,0	220,0	36,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	95,5	41,2	38,5
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	200,5	80,6	53,0
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 19. Archetype - residential building (AB), climatic zone C3 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - C3_RES_AB_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,830	1,310	1,260
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	181	54	53
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	70	20	20
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	19	8	4
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,490	0,380	0,270
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,630	0,540	0,850
Technical building system	Energy carrier per space heating	Natural gas = 81%, Electricity = 17%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 37%, Electricity = 55%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,560	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	97,2	29,1	24,5
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	15,9	4,1	3,6
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	88,0	32,0	32,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	132,6	42,2	34,9
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	219,9	51,9	45,0
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 20. Archetype - residential building (AB), climatic zone C3 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - C3_RES_AB_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,710	1,770	1,170
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	182	46	48
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	71	18	19
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	18	5	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	0,990	0,220	0,440
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,780	0,570	0,110
Technical building system	Energy carrier per space heating	Natural gas = 62%, Electricity = 35%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 38%, Electricity = 58%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	1,000	0,330	0,230
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	84,0	25,7	22,2
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	13,7	3,6	3,0
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	84,0	28,0	28,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	117,1	39,4	33,3
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	203,0	45,8	44,3
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 21. Archetype - residential building (SFH), climatic zone C3 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - C3_RES_SFH_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	1,110	0,400	0,260
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	270	93	74
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	104	34	29
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	20	6	4
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,070	0,200	0,400
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,780	0,650	0,20
Technical building system	Energy carrier per space heating	Natural gas = 53%, Electricity = 22%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 29%, Electricity = 46%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,320	0,010
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	122,9	32,7	29,7
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	17,1	3,9	3,8
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	28,0	28,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	171,1	49,5	48,0
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	239,2	60,4	56,8
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 22. Archetype - residential building (AB), climatic zone D2 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - D2_RES_AB_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	2,820	1,340	1,210
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	198	50	34
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	76	19	13
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	17	4	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,530	0,340	0,240
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,220	0,780	0,470
Technical building system	Energy carrier per space heating	Natural gas = 88%, Electricity = 9%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 73%, Electricity = 21%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,060	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	131,8	35,0	29,8
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	5,3	2,0	1,7
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	28,0	28,0
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	196,6	56,4	46,8
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	265,6	58,5	55,6
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 23. Archetype - residential building (AB), climatic zone D2 (Catalonia Region), construction period 1981-2006

CATALAN EPC DATABASE - D2_RES_AB_CP5						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	3,070	1,690	1,360
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	195	40	39
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	76	15	16
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	17	3	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,000	0,240	0,490
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	3,780	0,000	0,340
Technical building system	Energy carrier per space heating	Natural gas = 83%, Electricity = 15%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 78%, Electricity = 20%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,770	0,060	0,110
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	110,4	27,6	26,2
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	4,3	2,0	1,9
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	13,0	32,0
	Seasonal space heating energy efficiency	η <sub>S;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>S;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>S;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	171,4	48,7	43,1
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	230,2	52,0	49,3
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-



Table 24. Archetype - residential building (AB), climatic zone D3 (Catalonia Region), construction period 1961-1980

CATALAN EPC DATABASE - D3_RES_AB_CP4						
	Data	Symbol	Unit of measure	Median	(Q <sub>3</sub> – Q <sub>2</sub> )	(Q <sub>2</sub> – Q <sub>1</sub> )
Geometry	Compactness ratio	CR	m <sup>-1</sup>	3,000	1,410	1,250
	Thermally heated gross volume	V <sub>H;g</sub>	m <sup>3</sup>	224	70	43
	Thermally heated floor area	A <sub>H;use;ztc</sub>	m <sup>2</sup>	86	26	16
	Transparent thermal envelope area on thermal envelope area	A <sub>wi</sub> /A <sub>env</sub>	%	15	4	3
Envelope	Mean thermal transmittance of opaque building envelope	U <sub>op</sub>	W/(m <sup>2</sup> ·K)	1,510	0,370	0,210
	Mean thermal transmittance of transparent building envelope	U <sub>wi</sub>	W/(m <sup>2</sup> ·K)	4,220	0,780	0,550
Technical building system	Energy carrier per space heating	Natural gas = 80%, Electricity = 9%				
	Energy carrier per space cooling	Electricity = 100%				
	Energy carrier per domestic hot water	Natural gas = 73%, Electricity = 18%				
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	0,740	0,040	0,120
	Mean seasonal efficiency of the heating generation sub-system	η <sub>H;gn</sub>	–	-	-	-
	Utilisation energy efficiency	η <sub>H;u</sub>	–	-	-	-
Energy indicators	Energy need for space heating	EP <sub>H;nd;ztc</sub>	kWh/m <sup>2</sup>	128,3	27,8	28,6
	Energy need for space cooling	EP <sub>C;nd;ztc</sub>	kWh/m <sup>2</sup>	13,2	3,6	2,9
	Energy need for domestic hot water	EP <sub>W;nd;ztc</sub>	kWh/m <sup>2</sup>	112,0	38,0	49,3
	Seasonal space heating energy efficiency	η <sub>s;H</sub>	–	-	-	-
	Seasonal space cooling energy efficiency	η <sub>s;C</sub>	–	-	-	-
	Seasonal domestic hot water energy efficiency	η <sub>s;W</sub>	–	-	-	-
	Non-renewable energy performance per space heating	EP <sub>H;nren</sub>	kWh/m <sup>2</sup>	209,5	48,6	52,3
	Non-renewable energy performance per space cooling	EP <sub>C;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Non-renewable energy performance per domestic hot water	EP <sub>W;nren</sub>	kWh/m <sup>2</sup>	-	-	-
	Overall non-renewable energy performance	EP <sub>gl;nren</sub>	kWh/m <sup>2</sup>	276,3	55,3	57,0
	Overall renewable energy performance	EP <sub>gl;ren</sub>	kWh/m <sup>2</sup>	-	-	-
	Renewable Energy Ratio	RER	%	-	-	-

