

Barcelona, November 11, 2022

The site of the former **Hospital de la Santa Creu i Sant Pau** is located in Barcelona. Designed by the **architect Lluís Domènech i Montaner**, one of the **main representatives of Catalan modernism**. It was built between 1902 and 1930, in two phases.

With its main building and numerous pavilions, the Hospital de Sant Pau is **one of the largest ensembles of modernist architecture**, recognized as a **World Heritage Site by UNESCO in 1997**. It is also an Asset of Cultural Interest with the number RI-51-00004193



Among all the buildings, the Administration Pavilion stands out, which is accessed by a wide staircase.

In the year 2011 we began a process of rehabilitation of the **Administration Pavilion** due to the numerous pathologies that the building suffered.

The surface of the ground floor of the building, approximately 1,650 m², **suffered from rising damp in a generalized way in all the walls of the ground floor**.

In October 2011 we commissioned the company **Rehabilit** (partner in Catalonia of the company **Humicontrol**) to treat the **rising damp** that affected the **Administration Pavilion**.

In order to carry out the damp treatment, **4 MURSEC ECO wireless electro-osmosis devices** of the company **Humicontrol** were installed in some specific locations.

At the time of installation of the MURSEC ECO system against the ascending humidity **we took some moisture samples of the walls in 12 check points. At each check point, three samples were taken at different heights: 20 centimeters, 1 meter and 1.70 meters high.**

Most of the walls analyzed are perimeter, and some of them have the presence of outer lateral lands.

The correct way to measure the humidity of the wall is through the **Calcium Carbide system**. The system consists of making some holes in the wall in order to obtain a sample of the internal material of the wall. This material is deposited in the carbide pump, where the calcium carbide is also inserted. Calcium carbide reacts with moisture present in the sample and acetylene is produced. The pressure gauge of the carbide pump indicates the exact % humidity of the sample. This is the **only system accepted at the regulatory level to ensure the moisture value of a wall according to the UNE EN ISO 15801:2010 standard (Conservation of cultural heritage. Test methods. Determination of water absorption by capillarity.)**

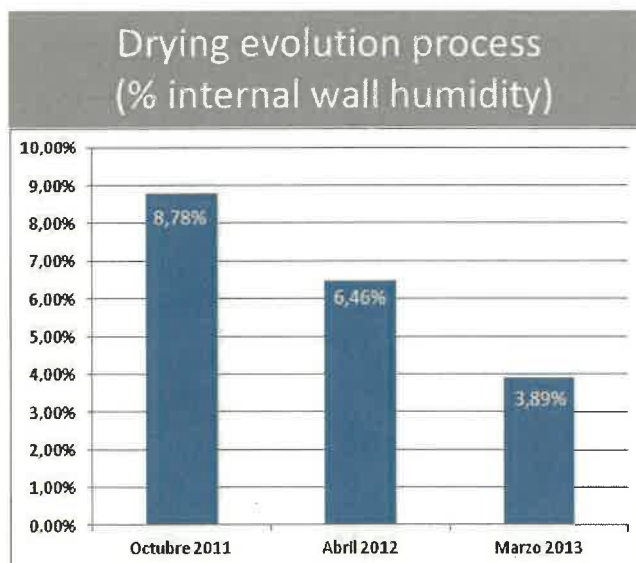


This process was repeated at each of the three heights of the 12 checkpoints.

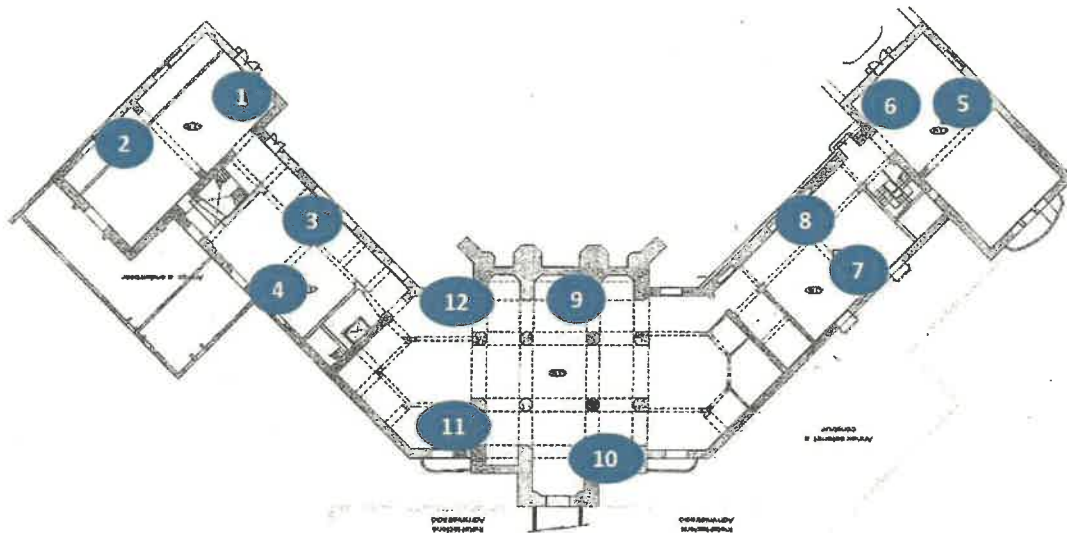
Up to a total of 36 samples were taken. Tabulated the data obtained an average humidity of **8.78%.**

We repeated the same process in **April 2012** and finally in **March 2013** obtaining a result of **6.46%** and **3.89%** respectively.

The attached graph shows the evolution of the drying process of the walls until reaching the residual moisture value.



The attached floor plan shows the 12 locations where moisture samples were taken using the Calcium Carbide system.



In the attached table you can see all the results we obtained during this period of a year and a half that goes from October 2011 to March 2013.

Instalación							Instalación								
Tierras (s/n)		Fecha		Fecha		Fecha		Tierras (s/n)		Fecha		Fecha		Fecha	
		20/10/2011		25/4/2012		19/3/2013				20/10/2011		25/4/2012		19/3/2013	
		Sistema		Sistema		Sistema				Sistema		Sistema		Sistema	
		CM		CM		CM				CM		CM		CM	
		Posición	Material	Media	Media	Media			Posición	Material	Media	Media	Media		
1	ENTRADA ESQUERRA			3,67%	5,50%	3,83%			7	ENTRE FINESTRES ESQUERRA			10,00%	7,00%	
a)		1,7	PIEDRA	7,50%	4,00%	3,00%			a)	X	1,7	PIEDRA	7,50%	5,50%	PLADUR
b)		1	PIEDRA	8,00%	5,50%	3,50%			b)	X	1	PIEDRA	10,50%	6,50%	PLADUR
c)		0,2	PIEDRA	10,50%	7,00%	5,00%			c)	X	0,2	PIEDRA	12,00%	9,00%	PLADUR
2	PARET DRETA			8,33%	5,33%	3,50%			8	ENTRE FINESTRES DRETA			10,00%	7,00%	5,50%
a)		1,7	PIEDRA	6,00%	4,50%	3,00%			a)	X	1,7	PIEDRA	8,50%	7,00%	5,00%
b)		1	PIEDRA	7,50%	5,50%	2,00%			b)	X	1	PIEDRA	10,00%	6,50%	6,00%
c)		0,2	PIEDRA	11,50%	6,00%	5,50%			c)	X	0,2	PIEDRA	11,50%	7,50%	5,50%
3	ENTRE FINESTRES			12,17%	9,67%	4,50%			9	PILAR DRET			5,63%	5,33%	2,83%
a)	X	1,7	PIEDRA	8,50%	8,00%	4,00%			a)		1,7	PIEDRA	6,00%	4,50%	2,00%
b)	X	1	PIEDRA	12,00%	10,00%	4,50%			b)		1	PIEDRA	6,50%	5,00%	3,00%
c)	X	0,2	PIEDRA	16,00%	11,00%	5,00%			c)		0,2	PIEDRA	8,00%	6,50%	3,50%
4	ENTRE FINESTRA I PORTA			7,50%	5,67%	3,17%			10	PARET COSTAT TUNEL ESQUERRA			10,33%	6,67%	
a)		1,7	PIEDRA	6,00%	4,00%	2,50%			a)	X	1,7	PIEDRA	9,00%	5,50%	2,50%
b)		1	PIEDRA	7,50%	5,50%	3,00%			b)	X	1	PIEDRA	10,50%	6,00%	3,50%
c)		0,2	PIEDRA	9,00%	7,50%	4,00%			c)	X	0,2	PIEDRA	11,50%	8,50%	No accesible
5	SEGONA ENTRADA ESQUERRA			9,00%	6,50%				11	PARET DRETA FONS			7,50%	6,50%	4,33%
a)		1,7	PIEDRA	7,00%	5,00%	No accesible			a)		1,7	PIEDRA	6,00%	5,50%	4,00%
b)		1	PIEDRA	9,50%	6,50%	No accesible			b)		1	PIEDRA	7,50%	6,50%	5,00%
c)		0,2	PIEDRA	10,50%	8,00%	No accesible			c)		0,2	PIEDRA	9,00%	7,50%	4,00%
6	SEGONA ENTRADA DRETA			8,17%	5,83%	2,67%			12	ENTRE FINESTRA I PILAR			9,83%	7,33%	4,67%
a)		1,7	PIEDRA	6,50%	4,50%	2,00%			a)	X	1,7	PIEDRA	8,00%	5,50%	4,50%
b)		1	PIEDRA	8,00%	5,50%	2,50%			b)	X	1	PIEDRA	9,50%	7,50%	4,00%
c)		0,2	PIEDRA	10,00%	7,50%	3,50%			c)	X	0,2	PIEDRA	12,00%	9,00%	5,50%
												Media humedad total			
												9,03%			
												Media sin valores no comparables			
												8,78%			
												6,46%			
												3,89%			


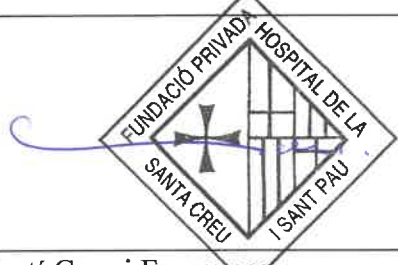
The decrease in humidity occurred at each and every one of the 12 check points. All material retains a residual natural moisture ranging from 2% to 4%. In this case we have very thick and heterogeneous walls, some of the behaving as a basement.

Once we verified the clear decrease in the humidity of the walls, we proceeded to restore the walls with the appropriate lime mortars.

We attach a photograph of one of the walls in its initial state, and in its current state.



As of today, November 11, 2022, we can see that the walls are still in perfect condition.

	
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