The wine cathedrals of Terra Alta
Fruit of Union. Symbol of Strength.
The Catalans say, “Make a virtue out of necessity”. It is no less true that we have always learned from crises. The Modernist wineries of Terra Alta, like other buildings of their kind in Catalonia, are the result of the response to an unprecedented crisis; the worst to hit the Catalan countryside: the phylloxera plague.

After ruining French vineyards and spreading throughout most of Europe, the phylloxera insect appeared in Empordà in 1879 and within two decades had already arrived in Terra Alta. By the end of the first decade of the twentieth century, the region had lost all its grapevine plantations.

As in so many other areas of Catalonia, the population of Terra Alta had decided to leave for the city to work in the thriving textile mills. The countryside had lost a lot of work and was becoming depopulated.

But not everyone left, not all the farmers threw in the towel. Whether farm owners or not, they saw that the future lay, necessarily, in cooperation. This gave rise to the cooperative movement: the industry decided to pool production and all associated services from purchasing and insurance to marketing.

The cooperative movement, the association that was able to find consensus among big landowners and small farmers, revolutionized the Catalan countryside and became the driving force behind its modernization. It also allows us to understand why today, amid the rustic landscape of rural Catalonia, there exist Modernist wineries that are unique in the world.

A single ship, of British nationality, infected the whole of Europe with phylloxera. It came from America, where the vine is resistant to the insect, which sucks the sap from the roots and kills the vine. Today, all grapevines are grafted onto American rootstock.
MODERNIST MOVEMENT, A TOUR DE FORCE

With phylloxera, the economy of Catalan vineyards hit rock bottom, and so did morale. Recovery through the cooperative movement was a real boost to self-esteem, and vine-growers wanted to emphasize that by commissioning authentic temples of wine. Because of their majesty and a certain resemblance to religious temples (laid out as naves, the use of arches and vaults, decorative elements), the writer Àngel Guimerà would call them ‘cathedrals of wine’.

And that was how the Modernist movement came to the countryside following its triumph in the city. It was the best tool to show that, now united, wine-makers were leading a promising industry. These new temples of wine (and also of olive oil) sent the world a message that is still in use today: unity is strength.

A new generation of architects, disciples of the great exponents of Modernist movement, but already heavily influenced by the “Noucentisme” movement, found in the building of the wine cathedrals their chance to go down in history. The most important of them all was undoubtedly Cèsar Martinell (Valls, 1888 - Barcelona, 1973), a pupil of Domènech i Muntaner and disciple of Antoni Gaudí. Martinell is the author of two Modernist wineries of Terra Alta.

The wine cathedrals are based aesthetically on Modernist style but functionally on Noucentisme. They are designed to optimize the productivity and quality of wine. Beyond the architecture, therefore, they constitute the most important examples of industrial engineering in rural areas.
As well as being an outstanding architect, Cèsar Martinell was a practical man. First, he saw the countryside as an opportunity to boost his career, then he learned how wine was made in order to fully understand how he was to design the space to optimize production.

Martinell not only spent many hours alongside wine-makers in order to learn the wine-making process, he also surrounded himself with wine experts and highly-qualified engineers in order to design the entire production process. In parallel with the technical side, he applied his humanist side in attempting to understand the social climate the Catalan countryside was going through and studied in depth the vibrant cooperative phenomenon.

With the wine cathedrals behind him, Cèsar Martinell returned to the city to build dozens of residential buildings, including large urban palaces for wealthy families. Here too, he was to be practical and able to see the opportunity to earn a living as very few architects did.

*Cesar Martinell built some forty cooperative buildings in less than a decade. Beyond his professional capacity, the cooperative members found in the architect from Valls a great closeness and enormous empathy towards the needs and thinking of the farmers.*
The work of Cèsar Martinell seeks a balance between utility, economy and aesthetics. Ultimately, he did not forget that these were wineries and, therefore, had to be spaces that optimize production (utility); construction had to be from local materials and easy to acquire (economy); and each of his projects sought to make the vine-growers feel proud of where they worked (aesthetics).

From one of his great masters, Antonio Gaudi, Martinell used the parabolic or inverted catenary arch. He also made impressive openings in their spandrels (the space between the arch and the wall) and designed Catalan vaults for the roofs and bases of the vats.

The predominant material was brick and flat brick, with the aim of using the clay in the area, providing jobs for local kilns and lowering building costs. He found tiles and ceramics to be the best resource for overall embellishment without breaking the bank.

But the most important feature of Cèsar Martinell’s agrarian architecture is what some experts have described as “total project”, because of his involvement in the design of the space for the production process, from the shape and location of the vats to ventilation for facilitating the work of operators. He was also concerned about insulation methods, fluid circulation, fermentation conditions and machinery layout.

The parabolic or inverted catenary arch, Gaudi’s legacy in works such as the Sagrada Familia or the attics of La Pedrera, is the result, viewed upside down, of the parabola described by a slack chain hanging at both ends.
Terra Alta, the southernmost region of Catalan vineyards, sees, standing out in the middle of its rural landscape, two real gems of Modernist movement: the cooperative wineries of Gandesa and Pinell de Brai. They constitute, without doubt, the two major examples of the canon of architect Cèsar Martinell, who, through these works, still projects Terra Alta in the world today.

Despite being built almost in parallel, the Gandesa and Pinell de Brai wineries have quite distinct and unique features. But what they have in common is their conception as spaces where, with minimum floor area, work could be carried out in the best possible way resulting in a quality product. To achieve this, Martinell chose good engineers and personally led each project.

What most strike the visitor of these two authentic temples of wine (and to a lesser extent, olive oil) are the majestic balanced parabolic or catenary arches, legacy of Gaudí. They seem to surge out of the earth as if nothing supported them, defying gravity yet in harmony with nature.

At the same time, the treatment of the spandrels (the space between the arches and walls) is of great beauty, entirely open and interlaced only by a forest of light slender pillars with further arches above. Even this elegant method of lightening the structure, making the naves almost transparent, has a purpose: in this case, creating raised walkways to facilitate access to the top of the vats.
Also having its own purpose, both at Pinell de Brai and Gandesa, is another striking feature: the Catalan vaults that Cèsar Martinell, in agreement with his team, placed under the vats and storage containers. The aim was to isolate the must and wine from the floor surface and, in turn, facilitate cleaning.

Both wine cathedrals are also notable for the simplicity of their materials, in search of an economically sustainable building. Brick and plaster predominate, all tastefully finished in green glazed tiles embellishing the exterior, with elements of native stone and ironwork, and the added value of ceramics from the artist Xavier Nogués, a close associate of Martinell.

However, the Modernist wineries of Terra Alta mean much more than can be seen with the eye. They are the silent witnesses of a history worth remembering: that of a generation who, despite the difficulties, wanted to play a leading role in their future.

Grape-growing in Terra Alta is built on thousands of years of tradition. Its characteristic variety is the Garnatxa blanca, of which it cultivates a third of world production.
The twentieth century began late in Pinell de Brai. The commissioning of the new winery (1918) coincided with the construction of the road that would link the town with Móra d’Ebre, while the plans were being drawn up for the arrival of electricity, telephone and water supply. It was not surprising that the vine-growers of Pinell de Brai expressed their financial means by requiring of Cesar Martinell a winery that would bring about prosperity.

The Pinell de Brai Agricultural Union winery is, for many, the quintessential wine cathedral. To begin with, its three-nave layout (central and two sides, plus a fourth above the
central one) requires only an apse for it to have the layout a Christian church. Furthermore, it is in Pinell de Brai where the architect displayed the full battery of aesthetics and style he had at his disposal.

The central nave and the east aisle house six rows of vats and the underground storage containers, while the west aisle focused on olive oil production. The fourth part of the nave holds the machine room and, probably due to budget problems, is the only area spanned with wooden trusses. The others feature the famous parabolic or inverted catenary arch with the open spandrels typical of Martinell and utilized as raised walkways to access the top of the vats.

On the outside, the appearance of the main facade is nothing less than majestic. Transition from the ground is by a high masonry plinth, cut through with ventilation openings that greatly facilitated the work of operators. The stonework door surrounds and the large windows with moulded brick mullions stand out dramatically, as do the green glazed tiles, so common in the work of Martinell, crowning the three naves, and, above all, the ceramic frieze of Xavier Nogués, depicting everyday scenes on the subject of wine and olive oil, the production process and their consumption.

When money started to become scarce, the promoters decided to dispense with the water tank that, as at Gandesa, was to crown the building. There were, however, resources for building the interior spiral staircase, supported on steel beams and a Catalan vault, connecting the machine room with the roof.

The Pinell de Brai building is undoubtedly a masterpiece of Catalan agricultural architecture.

Xavier Nogués charged between 4 and 5 pesetas per tile (some 5,000 pesetas in total), a cost that, towards the end of the work, the vine-growers decided to save themselves. But Cèsar Martinell had them made in secret, and they were kept in the winery basement instead of being placed. Their placement came two decades later, if not exactly in the expected order. The scene of the drunkard is the most notable of them all.
The Gandesa Agricultural Cooperative Union winery and mill (1919) was begun later and finished earlier than the one at Pinell de Brai. It was commissioned rapidly, just ten days after the formation of the Union. The drive and determination of the cooperative members encouraged Cèsar Martinell to design his most remarkable work, which in 2007 was recognized as one of the Seven Wonders of Catalonia.
In Gandesa, Martinell was to design a wine cathedral without a basilical floor plan (the basic feature linking these wineries to religious temples). Neither did he propose a symmetrical layout, or a single main façade. He decided to plaster and paint most of the outside white, enhancing the brickwork around the doors and windows, the plinths, the green glazed tiles of the sills and the power of the fascinating water tanks that crown the building.

From the right of the two central naves for vats, the production room is accessed, which is lower and resolved with a structure of arches. Attached behind it is another higher room with a vaulted roof, intended for receiving the grapes. One of its characteristic features, from the outside, is its concrete canopies, which cover and protect the hoppers (conical vessels receiving the grapes) from the sun.

The roof, with its forms emulating barrels and amphorae, is the most characteristic feature of the Gandesa winery. The different heights of each nave is the secret to letting the light in evenly throughout the interior through open windows beneath each of the Catalan vaults erected directly on the parabolic arches supporting the structure.

The overall result, on the inside, is a harmonious and balanced winery that is bright and spacious. The raised walkway above the two naves for concrete vats (as usual, making use of the openings in the spandrels of the balanced arches) provides an open-plan, panoramic view of the whole work. This view is likely no accident: again, Martinell uses these walkways to turn them into a unique vantage point from which to contemplate his masterpiece.

*At the rear of the winery, Cèsar Martinell designed a tavern, which would not be built until the 1980s. The job was given to the architect Manuel Ribas i Piera, who followed the original plans of 1919.*