



CLOS PÀCHEM

Architectural Memory

www.clospachem.com

Carrer de la Font 1D
43737 Gratallops | Priorat
Spain

The challenge was to make the winery building honour the biodynamic principles used in the wine making process by trying to optimise its behaviour using passive concepts, or those requiring the least artificial interference.

A producer of Priorat wines requiring a new winery as a result of increased production, that would be built in a building plot in the heart of the village of Gratallops.

Of polygonal geometry the “L” shaped building plot is surrounded by a typical historic quarter layout, with narrow streets, terraced houses, and exceptionally, the dominating presence of the church, key to the character of the area.

In the building plot a stone wall of irregular lay out, 10 meters in height at the highest points, originally an old court or “frontón” wall, sets a boundary to the area effectively separating it from the neighbours. Its geometry, assortment of stones, layers of terracotta and old render make it a starting and defining point for the project.

The result of applying building regulations and with the purpose of creating one single space, maximising volume, two differentiated areas are created: The production area is the vault, a quadrangular space of great volume, maximising width and height. The remaining space is “Z” shaped -the passage- comprising all the spaces around the vault extending itself like an interior street following the geometry of the boundary stone wall. This space, is an extension of the public space inside the building plot, which gives access to the precinct serving as a through way, and welcome area to visits and tastings.

The Vault’s interior is a grand space in three floors, where the fermentation tanks are situated. It is the central part of the project defining the cellar, around which the remaining spaces are arranged. A large volume of fresh air is surrounded and protected by thick walls of up to 1,75m thick. A system of load supporting brick walls between pillars create chambers which promote air circulation –between walls- cooling the building. Inside the great walls smaller rooms are used as storage areas for accessories.

In the whole perimeter of the central part of the vault, on the ground floor and following suit to the structural pillars of the walls, cavities resembling “chapels” visually connect the vault and the passageway, also allowing machinery used in the vinification room to be manoeuvred and stored. Hence, the upper part of the vault remains dark and dense, but at ground level it opens up to light coming from the passageway.



The passageway is both the visitor and grape reception area. A thermal transition towards the cellar through a slightly inclined walkway gradually loses height allowing access to the lower level of the Vault and via a set of terraces that lead downward to the street behind the cellar. This semi- exterior concourse follows a succession of roof decks at different heights which are combined with flooring slabs in the form of wide landings between the stairs.

The decks are green and the rain water collects until it overflows slowly from one deck to the next, the water course cools the environment and waters the vegetation. Apart from offering rain protection these terraces achieve a direct solar block and provide the concourse with the refreshing coolness of a terraced garden, an ideal location for a shop –bar in the open air where wine can be bought, tasted or where food can be consumed. The most critical areas are the barrel room and the bottled wine storage areas, requiring a maximum hydrothermal stability and for this reason they are situated in direct contact with the ground. But the great challenge in the whole building is the vinification room which must be thermally stable but at the same time without the interaction of the ground. The first design strategy was to maximise its height favouring the stratification of the warm air at the top, distancing it from the wine tanks. Secondly, to maximise the hydro-thermal inertia of the constructive elements, hence maintaining the interior's hydrothermal stability. A third bioclimatic strategy is the roofing decks themselves, which in the central parts behave as a cooling roof using radiation from the sky to cool the deck of the vault at night. Where a two level closed water circulation system is created. The more elevated one, in the exterior, dissipates heat by exchange of radiation at night, and the lower one, which in contact with the flooring deck, cools the interior during the day. A large scale interchange is created between the interior of the vault and the infinite heat sink of the universe.

The facades that form boundary with the streets are crowned by a roof tile finish and rendered by a thin veneer of lime mortar, both of which integrate the building in the village context and create a sharp contrast in character between the interior passage and the exterior of the building. As the building is entered, the vernacular appearance of the building's exterior, is transformed by the deconstruction of the constructive systems towards the interior, progressively making the true nature of the building apparent.