

Study of the Vaults in the San Martín de Arrieta Church (Vizcaya) after the fire in 2006

The fire in the roof of the San Martín de Arrieta Church affected the structural integrity of its vaults and arches. FHECOR developed a structural survey for the architect Félix Aguiriano, which has acted as the base for the restoration proposal albeit limited by a very tight budget.

The church consists of a single nave divided into five areas covered by gothic vaults. The fire in December 2006 provoked the fall of the wooden trusses onto the arch transverses which subsequently caused the crown to descend so dragging the vaults down with it.

The analysis of the problem was based on the theories of ultimate state limit, so studying two sets of segments oriented according to the long and short semi-axis which allow the determination that they are stable and that the working loads are moderate. Once the current

situation was checked, a cladding composed of a lime-based mortar and cement low in salts, was proposed as a solution. This would improve the capacity of the vaults against the applied loads as well as offering greater durability.

The common temptation to employ metal hoops, composite hoops, fiber-based materials and other foreign materials to this type of structure have been avoided as it was considered that this typology deserved the respect to receive materials which have served it well in its day and have worked well under compression and have offer excellent durability. The approach taken towards this intervention has been based on understanding and respect to the structure which was in our hands.



Spain /2006
Project data

Structural Type:
Gothic vaults
Location:
San Martín de Arrieta, Vizcaya
Date of Works:
2008
Scope of Works:
Structural evaluation and repair proposal