



The Salvatierra and Calatrava la Nueva castles: two remarkable constructions in the use of the peninsular eruptive rocks (Volcanic region of Campo de Calatrava, Ciudad Real, Spain)

Estela Escobar Lahoz¹- Elena González Cárdenas¹- Rafael U. Gosálvez Rey¹ - Rafael Becerra Ramírez¹

¹- Department of Geography and Territory Planning, University of Castilla-La Mancha, Ciudad Real (Spain). estela.escobar@uclm.es

1.- INTRODUCTION

The presence of volcanic material from the Campo de Calatrava has always been present in the daily lives of the inhabitants of this area, from the immemorial time. Not only have taken advantage of its own landscaped setting but have benefited from specific conditions given to them by volcanoes. "Los diversos materiales eruptivos que, salpicados y con mayor o menor extensión, recubren a las formaciones geológicas de la región central de la provincia de Ciudad Real, son objeto desde hace ya bastante tiempo, de una intensa explotación. Pero no solo el hombre ha buscado los materiales duros, o sea los constituidos por las coladas basálticas, sino que también ha aprovechado los materiales térreos constituidos por los antiguos mantos de cenizas y lapillis, es decir, por los pequeños materiales eruptivos de proyección"

E. Hernández Pacheco. (1932) La región volcánica central de España.



Basaltic flow. Zurriaga volcano



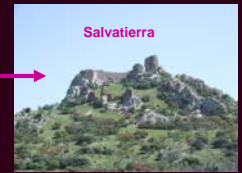
Spatter. La Cornudilla volcano



Hydromagmatic deposits. Varondillo Maar



The Salvierra and Calatrava la Nueva castles



Salvierra



Calatrava la Nueva

2. ERUPTIVE MATERIAL IN THE VOLCANIC REGION OF CAMPO DE CALATRAVA

In the eruptive history of Calatrava volcanism have created a series of distinct volcanic deposits, according mainly to their chemical composition and mineralogical, but also the type of eruptions that have generated. This continental volcanism is characterized by basic and ultrabasic magmas (alkaline magmas very rich in CO₂, and a very low silica content - less than 45% -- (González Cárdenas, website). Ancochea (1983) difference between;

- Olivine basalts, lava and pyroclastic fall
- Olivine nephelinite, lava and pyroclastic fall
- Olivine melilitita, lava and pyroclastic fall
- Limburgitas, pyroclastic fall
- Olivine leucitite
- Hydromagmatic deposits

3.-THE SALVATIERRA CASTLE

Located on the slope of the Sierra de Calatrava, is an imposing fortified complex built by Muslims around the X or XI century, on other existing construction of Roman origin. Strategically built on a steep hill of quartzite about 800 m altitude, is opposite the castle of Calatrava La Nueva, covering one of the most important natural routes that cross the Sierra Morena and unite the Central Plateau with the Depression of the Guadalquivir (Toledo and Cordoba). It was divided into several asuccessive and independent venues and at different levels, adapted to the morphology of the terrain and using rocks for defense. On the southwest side of the castle is located the homenaje tower, about 12 meters high and built of quartzite, limiting the use of volcanic stone ashlar (spatter) to the noblest parts like door and window jambs, together by mortar of "cal" and sand. The tower is split in two during the Lisbon earthquake, lets see what their inside with vaulted chambers, cisterns and large balcony.

Salvierra Castle is privately owned and was in progressive state of ruin. It is protected by the general declaration of the decree of April 22 of 1949, and Law 16/1985 on Spanish Historical Heritage.



Salvierra castle. Images



4.- THE CALATRAVA LA NUEVA CASTLE

This is an impressive fortress on a hill framed quartzite (Alacranejo), to 936 m altitude. Built between 1212 and 1217 on the ancient Castillo de Dueñas, is occupied by the Military Order of Calatrava in 1217 when he moved from Calatrava la Vieja. Was badly damaged in the earthquake of Lisbon in 1755. so in 1802, along with confiscation episodes produced in Spain is abandoned. In 1931 it declared a National Historic. This is a complex compound consisting of church, monastery, guest house, "puebla" and external enclosure, all heavily fortified. The arches of the doors of the premises of the castle are made with red soldiers lapillis (spatter); at the convent are interspersed with other soldiers lapillis cemented with carbonates, are bicolor arcs, alternating red and white. In the Church, the bow and rosette abroad are also made with soldiers lapillis. The interior is constructed entirely with blocks of basalt. The quarry where the material was removed is located at the foot of the Salvierra castle, Belonging to the lava flow of Las Canteras volcano

Calatrava La Nueva castle. Images



5. CONCLUSION

The geological history of the Campo de Calatrava has resulted in some materials susceptible to exploitation and use by man, creating a perfect symbiosis between nature and the anthropic landscape. Specialization has been observed depending on the materials, checking that the volcanic materials are located in areas where the quartzite is not suitable for high rigidity. We have also verified the existence of an aesthetic especially with the use of spatter, highlighting the most important units or more noble, resulting in a significant contrast between the white quartzite and the red or black lava

REFERENCES

- ANCOCHEA SOTO, E. (1983): *Evolución espacial y temporal del volcanismo reciente de España Central*. Tesis Doctoral. U. Complutense de Madrid, Madrid.
- HERNÁNDEZ PACHECO, E. (1932): *La región volcánica central de España*. Academia de Ciencias Exactas, Físicas y Naturales. Madrid
- ESCOBAR LAHOZ, E. et al (2010): "Utilización del material eruptivo en la Región Volcánica del Campo de Calatrava (Ciudad Real, España)" en: *Aportaciones recientes en Volcanología*. Asociación para el Desarrollo del Campo de Calatrava
- ARCHIVOS PATRIMONIO HISTÓRICO DE LA PROVINCIA DE CIUDAD REAL