



Building stone as a part of a World Heritage site: "Piedra Pajarilla" Granite and the city of Salamanca, Spain

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Building stone is an important issue in most human societies. While some civilisations cared for the “beauty” of the stone, most focussed on physical properties, especially durability, as well as the ease of transportation to construction sites. These last issues were the rules for exploiting some rocks, in preference to others, for centuries.

Ancient Roman society became expert in constructing durable engineering projects (e.g. roads, bridges, aqueducts). Most of their projects were realised using local granites and most remain in excellent condition today. However, at the beginning of last century road networks started to expand; transportation evolved, and trucks and ships were able to move large blocks of stone across the world. And so a second important feature of stone, its beauty, became significant. In Europe, rocks from places such as Brazil, India, Pakistan and Iran, which were once considered exotic, are now commonly utilised, and modern cities can be compared with a commercial stone catalogue.

The historic cores of many European cities need to preserve their integrity, using the original building stone of the city both for new construction and for restoration. A supply of the original material should be preserved in order to avoid use of alternative building stones when restoring old monuments. In their absence, experiments with alternative stones, mortar and resins have been attempted, with unfortunate results both in appearance and in durability of the monument. This practice, which should also be avoided for recent buildings, should be forbidden in the restoration of historical buildings and monuments.

With this perspective, we consider Salamanca, in Spain, as an example, where the historic city core has been granted UNESCO World Heritage status in 1988, and all associated buildings, monuments and pedestrian streets are constructed from original materials. One of these materials, Martinamor Granite, was quarried for centuries from the immediate area and was especially used by architects during the 18th and 19th centuries for reconstruction following the Lisbon earthquake. Although the associated quarries are no longer active, the quarry sites remain relatively undisturbed and accessible. A renewal of quarrying is feasible if additional stone supplies were needed for heritage restoration so there is a need to preserve these historic quarries in anticipation of such work.

The local name given to Martinamor Granite near Salamanca is “Piedra Pajarilla” meaning “little bird stone”. There is value in recording this name in a formal designation as it probably derives from its unique mineralogical character. The granite commonly presents what is termed a luxullianitic texture that results from clustering of radially arranged acicular tourmaline crystals. These accumulations are present in different ways: either spread randomly through the rock or showing distinctive clusters that remind one of the shapes of flying birds, hence the name.

The Martinamor Granite is also considered here in the context of the newly proposed ‘Global Heritage Stone Resource’ designation (Cooper, 2010). Such a designation for Martinamor Granite can facilitate both the ongoing use of this historic building stone and the preservation of quarries for use in future restoration work on Salamanca’s historical buildings. It also allows the unique features of the stone, as exemplified by its local name and distinctive mineral textures, to be recorded within an international designation of geological and heritage significance.

