



Evolution in the use of natural building stone in Madrid, Spain

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The first natural building stone used in Madrid was the flint, from the 9th to the 12th century. It was first used by the Arabs and there are some nice examples left, such as the Arab Wall in the very centre of Madrid. It was a hard and very resistant material, and the end of its use probably had more to do with the fact that was a really difficult stone to work, cut, shape and carve with due to its hardness and compactness, than with its suitability and availability as a building stone. This was the main reason to start using other type of materials, such as the Cretaceous limestones and dolostones- Redueña stone-; although their quarries were not as close to the city as the flintstones were, a Roman road made possible to bring this material to the city.

The Redueña stone then became the most frequent used building stone in the city (used a longer time ago in the quarries areas): nice colour, easy to extract and to work and availability were some of the reasons for it, lasting its predominance until the 17th century. At the same time, more or less, the use of granitic materials started, abundant in the Central System range that limits the North of the Madrid province. This material – traditionally known as Berroqueña stone- never stopped to be used in built heritage since then. Although there are many different quarries, until the 17th century, granites from the Zarzalejo area (Center-West area of the Guadarrama mountain range) were most used, and also those from the Alpedrete area (Center-East area of the mentioned range) during mainly the 18th century. It was not until this century when the advances in underground mining extraction and the construction of a bridge crossing the Tajo river, allowed the use of Colmenar stone in the city of Madrid, a limestone located at the Southeast of Madrid. It is a white, little porous and resistant material, which, together with the granite, became the traditional building stones of Madrid. This limestone shows excellent properties and is still used nowadays for construction.

It was at the end of the 19th and the beginning of the 20th centuries, when the advanced in transport communications, mainly the railway network, allowed the entrance of new building stones, from Spain and abroad (Novelda stone, Baides stone, etc). The study of some heritage buildings let us know this fact, such as the Cathedral and Crypt of La Almudena, the Pantheon of Illustrious Men and the San Manuel and San Benito church.

Illustrating all of this, the group designed Geomonumental routes, in which all these materials are shown either on site, in the quarries, or in the heritage building in where they were placed.