



BUILT LANDSCAPE / The hydrological landscape

The utilization of water - a scarce, precious resource in the climatic and cultural context of the Mediterranean basin - has given rise in Mallorca and the Tramuntana area in particular to the construction of a complex network of traditional architecture related to water-harvesting techniques. The aim of these constructions is to collect and harvest underground or surface water and transport, distribute and store it. Throughout history important systems have been designed for the regulation and control of surplus water caused occasionally by torrential rainfall that gives rise to flooding and other effects related to soil erosion.

Throughout the Mediterranean region, water is a limited resource “ its presence and absence is highly seasonal ” and the island of Mallorca is no exception to this specific circumstance. The island, which covers 3,620 km², has no rivers but instead dry watercourses, gullies, streams and torrents. Mallorca also has springs. These are isolated and scattered about the island, albeit more abundant by far in the Tramuntana area, as opposed to the rest of the island, which contains a large number of wells. The volume of water in these springs is rather low.

Water from springs and torrents has traditionally been used for multiple purposes. As well as being used for human consumption on large rural estates (possessions) that have traditionally formed the base structure of the island and in towns and villages, water was used for livestock, as a driving force and for the irrigation of crops.

Traditional water collection, regulation, distribution and storage systems that were in operation, generally speaking, until well into the 20th century (and still are in many cases) are the result of continuous developments that have been modified, extended and adapted since the Middle Ages, (more specifically since the 13th century), as is made clear by different documentary references.

The Tramuntana area is unique in that, in the same place, agricultural, water-supply and drainage systems all coexist, forming a system that can only be understood if we bear in mind the complex sum of its different parts and not only its individual elements. Moreover, on top of the natural network of dry watercourses and torrents which perform the natural function of draining surplus water, there is an overlapping anthropic water network. This anthropic network is integrated in and has been adapted to the physical and topographical characteristics of the terrain, forming a hydrological landscape whose virtue resides precisely in the balanced integration of human activity into the natural environment and in its component architecture, thus its heritage value.

The development of the aforementioned dual hydrological network was motivated by man’s need to take advantage of the Tramuntana area’s rich supplies of water, within the geographical context of a Mediterranean island characterized by an absence of regular water resources. In this way, given their high rainfall in comparison to the rest of the island, the Tramuntana Mountains have directly or indirectly acted as the main water provider for the island of Mallorca. But, paradoxically, the physical conditions that make the relative abundance of water in the Tramuntana Mountains possible also constitute a threat to its fragile built heritage, as it is exposed to significant flooding on occasions and equally significant erosion as a result.

The resulting ethnological heritage is not only material, but includes intangible aspects, since the water supply systems and lands supplied with water are clearly reflected in the local toponymy and specific terminology, always expressed in the Mallorcan variant of the Catalan language. In this way, springs, mills, vegetable gardens and other rural spaces, however small they may be, take on a distinctive place name. From a geographical point of view, the spatial use of this rich, extensive toponymic vocabulary is extremely useful for identifying the exact location and delimitation of hydrological landscapes, since many place names refer to water supply systems and other hydrographical items (hydronyms).



In order to take advantage of the volume of water in the hydrographic basins in the Tramuntana Mountains and secure land for farming, the different human groups that occupied the area made substantial use of the dry-stone construction technique to delimit and establish the beds of torrents, streams and other secondary courses, and to build walls along certain stretches or watercourses. After this it was relatively easy to decide on the layout of irrigation channels and, in general, the built water supply system, made up of networks to collect and divert water in the form of weirs, distribution conduits, and storage systems comprising ponds, open-air cisterns, water tanks, and even the same widened irrigation channel.

The result is a complex, singular hydrological landscape and, all along it, water channelled from a spring, stream or torrent is used for different purposes. This landscape is characterized by the density and abundance of the different types of items it contains, which may be organized in six groups depending on their functions:

1. **Surface and underground water collection systems:** natural springs and sources, dams associated with surface watercourses and reservoirs, underground water galleries, wells and noria-type waterwheels.
2. **Water collection and distribution systems:** irrigation channels and other conduits.
3. **Water control systems:** ralles, albellons, eixugadors, parats, marjades in traditional Mallorcan terminology.
4. **Storage systems:** tanks, open-air cisterns, troughs.
5. **Elements driven by water:** flour mills and paper mills.
6. **Elements to make use of snow:** ice stores.