THE ELASTIC TERRITORY: LEARNING FROM TRADITION TO ADAPT

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For decades we have designed territory as if it were possible to fully control what happens in it. We have paved over floodplains, buried rivers beneath concrete slabs and designed impermeable cities, convinced that any climate anomaly could be solved by expelling the excess as quickly as possible, out of our sight. The availability of energy and the development of ever more sophisticated building systems led us to believe that we could plan with our backs turned to the geography we inhabit.

Today, that fiction has broken down. We live with severe droughts followed by episodes of torrential rain, phenomena such as cut-off lows and heatwaves that turn streets into especially vulnerable spaces. The traditional reactive model is no longer enough: the response cannot be limited to burying higher-capacity collector sewers or building higher retaining walls. Resilience requires another way of intervening, based on the territory's capacity to adapt.

The lesson of the vernacular: from traditional logic to nature-based solutions

This search for new forms of adaptation does not require inventing solutions from scratch; it means reconnecting with a territorial memory that the modern approach gradually pushed into the background.

Historic settlements did not have the technical capacity we have today to transform the conditions of a place. Building therefore meant first understanding the territory, negotiating with its surroundings and adapting architecture to its limits.

Cultivation terraces, retention banks on hillsides, systems of careo channels —able to infiltrate water on the summits so that it resurfaces months later in the valleys— and orientation determined by prevailing winds and historic flood levels all reveal this attitude. Traditional communities took existing physical conditions as direct design constraints, identifying where the soil needed porosity and when water demanded its own space.

Nature-based solutions (NbS) are the contemporary technical framework for bringing this same logic into urban design. Established cases in northern Europe, such as Benthemplein square in Rotterdam (De Urbanisten) or Enghaveparken park in Copenhagen (Tredje Natur), show that flooding can be an active design parameter. This same logic is beginning to find examples closer to home in the Basque Country, where interventions such as the Txomin Enea river park in Donostia, designed as a controlled floodplain against floods on the Urumea, or the integration of Sustainable Urban Drainage Systems (SUDS) into the development of Arteleku square bring water and renaturalisation into the urban project. In day-to-day use, these spaces work as civic and recreational areas; but during extreme rainfall they retain and attenuate runoff, protecting the adjacent urban fabric.

The metrics of the porous territory: assessing urban adaptation

To integrate this approach into contemporary public policy, it is essential to quantify its impacts.

Data make it possible to identify the most vulnerable areas, check which solutions work and assess their performance over time, steering investment towards more porous and adaptive infrastructure.

One of the key indicators is the soil's water retention capacity. In consolidated urban fabrics with high levels of soil sealing, Sustainable Drainage Systems (SUDS) -such as infiltration trenches, rain gardens or permeable paving- make it possible to retain part of the water at source and reduce the volume of runoff reaching the sewer network. Under certain conditions, this retention can significantly attenuate peak flows, reducing pressure on collector sewers and the need to expand conventional infrastructure. Assessed over the medium and long term, these solutions can also offer economic and environmental advantages over certain civil engineering works.

But adaptation is not only about managing water. Restoring permeable surfaces, vegetation layers and shade trees helps to reduce the heat island effect and improve the thermal comfort of urban space. Projects converting roads into green corridors, such as the one on María Díaz de Haro street in Bilbao, show the potential of these interventions to improve local thermal conditions and people's comfort, as well as helping to reduce the energy demand of nearby buildings.

Measuring these impacts therefore means broadening the way we assess urban infrastructure. It is no longer enough to calculate how much an intervention costs or how much water it can drain away; what also matters is how much water the soil can retain, what thermal comfort a space provides and what environmental, social and economic benefits it generates. Metrics thus cease to be a tool for checking after the fact and become an instrument for deciding where and how to intervene.

From European regulation to the municipal scale

This logic has already reached the European regulatory framework. The European Nature Restoration Regulation sets binding targets to restore urban ecosystems and avoid any net loss of green space and tree canopy cover by 2030. Ecological restoration thus ceases to be merely an environmental strategy and starts to become part of urban planning.

But bringing these objectives down to the ground is not simple. Responsibilities remain fragmented: water falls to the river basin authorities; green spaces, to parks and gardens; land-use planning, to urban planning. A flood or a heatwave, however, pays no attention to these boundaries. Adaptation needs to coordinate these perspectives and translate them into specific decisions about urban space.

In the Basque Country, initiatives such as the Udalsarea 2030 network of municipalities show the value of this support at local level. The challenge is for objectives such as restoring soil permeability, managing water at source or increasing street shade to stop being merely strategies and become part of the urban design itself.

A change of perspective

This transition does not require complex technologies or decades of development. It demands a paradigm shift, a cultural transformation: learning to observe and read our surroundings again.

Diagnosing geography, topography, hydrography and climate dynamics in depth. And, instead of armouring the city to withstand extreme events or reacting late, once the damage is done, designing the territory so that it learns to live with them, cushioning their effects naturally and adapting to the specific conditions of each place.

Building urban resilience is not about erecting rigid defences, but about giving the soil back its innate capacity to filter, breathe and receive. It means understanding the territory as a living system capable of coexisting, in balance, with its own uncertainty.