

# **A GIS model for structuring and interpreting information on the lost medieval urban landscapes**

## **Fortifications of Trogir 220 BCE – 1500 CE**

Fortifications, the hallmark of medieval urban landscapes, often succumbed to modernisation. In Trogir, a city that has earned a place on the UNESCO World Heritage List since 1997 for its exceptional preservation of medieval and early modern urban fabric, just a few medieval fortification buildings have managed to stand the test of time. These include two High Medieval towers, a Late Medieval castle, and fragments of city walls.

This paper introduces a GIS model that meticulously gathers information on Trogir's preserved and dismantled fortifications from their foundation in 220 BCE until 1500. The model deepens our comprehension of what was preserved and what was lost and illuminates the profound influence these former structures had on the city's contemporary form. The inclusion of data on Hellenistic fortifications is paramount, given their pivotal role in shaping medieval ones.

The GIS model proposes a method of gathering information from different sources. The sources are 1) preserved buildings and fragments, 2) remains below the street level uncovered in archaeological campaigns, 3) historical maps and blueprints, 4) old photographs, 5) historical cityscapes and drawings, 6) historiographical texts and 7) archival documents of the medieval commune of Trogir. The model has seven layers, each providing information from a specific source type. The symbols used in the first three layers are polygons, representing the perimeters of the buildings or their parts. In the fourth and fifth layers, the lines represent the projection of the facades depicted in the sources, while in the last two, the points indicate textual information on buildings. Unifying categories for all layers are periods indicating the time of their construction and set according to the crucial social and political changes that affected the changes in the fortifications. There are six periods: Hellenistic, Late Antiquity (first expansion of the city), High Medieval (the city expansion that resulted in the urban medieval form preserved until today), Late Medieval (brought minor changes to the High Medieval city fortifications, but responsible to the fortifications of the suburb), Late Medieval after 1420 (when Venetian rule was established which required changes to secure the new government), and Renaissance (the first modernisations were due because the development of the artillery weapons). The periods are represented on the map by colours. It has to be emphasised that one Hellenistic tower was included in all subsequent changes and kept protecting the city until its dismantling in the nineteenth century. Each symbol has an attachment (available as pop-ups) that offers basic information: ID, building name, preservation, period, and date (if available). It also offers a description or summary (for texts), illustration of the source, caption, and references to the scholarly literature. Furthermore, the description/summary section offers a short interpretation of the information gathered from the source and explains how it dealt with a case of uncertainties.

The model emerged after almost two and a half decades of the author's dedicated study of the urban fabric of Trogir. Its primary aim is to encourage the use of GIS programs in the research of medieval

urban history, a field that primarily deals with fragments preserved in different sources that need to be critically analysed before mapping and provided with clear argumentation of their interpretation. This long-term commitment to the development of the GIS model reflects the author's unwavering dedication to advancing the field of medieval urban history research.