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Water Hazard in Coastal Area: Actions for conserving and protecting European World Heritage Cities

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It is well known that many of the European UNESCO World Heritage sites and cities are closely related to water bodies in their different forms, as they have close links with the sea (such as Venice, San Rossore, Dubrovnik) and with rivers (like Florence, Rome, Ferrara, etc). Surely there are many others with problems of water supply, water treatment, wastewater disposal, etc. The main objective of the work is therefore to institute measures which will permit to contribute towards the conservation and protection of such precious heritage sites and cities, particularly in coastal area, in the context of present urbanization and climatic modifications. It has therefore become necessary to identify and classify not only urban centres of historical importance but also historical hydraulic structures and works developed for both beneficial and harmful water management, hereinafter referred to as good water and bad water respectively.
Another objective is to raise the awareness of institutions and the public in general on the historical values of Heritage cities and hence the need to protect them.
The main activities of the study are directed at the following:
1) Collection and collation of information and documentation on water sources, intakes and distribution structures, flood events especially around urban centres, structural characteristics of bridges, defensive hydraulic structures of rivers from ancient times to the present.
2) Creation of an integrative water–urban data base in the form of a virtual museum.
3) Design and preparation of feasibility strategies for relevant historical works for renovation purposes and also hydrological analysis of flood events and reconstruction of historical flood series towards re-qualification of urban and riverine environments in the face of climate change.
4) Hydraulic risk analysis of complex hydraulic systems, performing flooding scenarios at different flow rates.