



QUATERNARY AND URBAN GEOLOGY

Adele Bertini, Maria Gabriella Forno

In the Italian peninsula, cities and towns are very complex systems where both environmental and social dynamics interact. Urban Geology gains insight into Earth surface processes by means of a variety of disciplines such as geomorphology, engineering geology, environmental geology, economic geology and hydrogeology. At the same time it proposes strategies for the sustainable use of subsurface resources in urban contexts.

On December 15, 2017 at the Dipartimento di Scienze della Terra of Florence (Italy) AIQUA set up a meeting between specialists involved with the various issues of Quaternary Urban Geology. The meeting day focused on the state of knowledge and on the prospects for development and implementation of urban sustainability policies, under non-emergency circumstances but rather for the purpose of prevention. The meeting, which was chaired by A. Bertini, M. Coli and G. Forno, included three invited lectures and eight free oral communications.

This volume of AMQ contains eight of the contributions presented at that meeting. Together with the discussions and the final round table, these talks represent AIQUA's first integrated contribution on Urban Geology in Italy. The papers focus on both metropolitan cities, such as Rome and Turin, and smaller towns; two analyses were directed to unique places such as Matera (European capital of culture 2019) and Perugia. Key case studies address specific urban geology issues; these include in-depth geological and geomorphological analyses focused on different depositional (e.g. volcanic sediments, marine deposits, continental gravels) and morphological (flat, hilly or steep) contexts. The presence of a high number of historically and monumentally valuable archaeological sites in these studies shows how urgent is the need for the implementation of geoscientific teamwork aimed at developing integrated Geoarchaeology. The final contribution in the volume is devoted to the use and management of renewable energies, especially geothermal energy. This paper stresses the importance of geosciences for sustainability calls, especially in cities overcrowded with people. All the papers of this volume show that the knowledge of the subsurface and awareness of geoscience issues are vital to the preservation of urban landscape. This expertise contributes to our resilience to natural hazards (e.g. flooding, ground instability, drought) as well as to the development of strategic land-use planning. In this perspective taking early actions to identify actual and potential problems, in urban context, is crucial to effectively face the challenges, which also have economic and social implications.

The associated editors take the opportunity to thank all the contributors to this volume. We also thank the many colleagues who reviewed the volume as well as the editor-in-chief of AQM who assisted us with this special issue.

The associated editors Adele Bertini and M. Gabriella Forno

