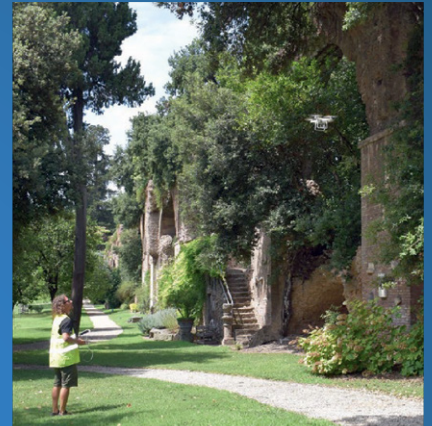


# NON-INTRUSIVE METHODOLOGIES FOR LARGE AREA URBAN RESEARCH



EDITED BY

I. P. HAYNES, T. RAVASI, S. KAY,  
S. PIRO, AND P. LIVERANI



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This volume is dedicated to the memory of our  
friend and esteemed colleague,  
Daniela Zamuner.



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# The topography of Rome. An outlook for the future

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The studies concerning the topography of Rome have a long tradition stemming from the Renaissance. The status of this field of research as a scientific and academic discipline dates back to the nineteenth century thanks to scholars like Heinrich Jordan, Christian Hülsen, Rodolfo Lanciani and – in the early twentieth century – Thomas Ashby. In the last generation this field underwent a dramatic renovation. On the one hand there have been great archaeological excavations such as the *Crypta Balbi* or the Imperial Fora, on the other there has been a more mature awareness of the importance of studying the urban phenomenon over the *long durée*, with equal attention to all historical periods.

The topography of a city – and the case of Rome is paradigmatic – is an invaluable source in its own. Its knowledge has important repercussions that go far beyond the reconstruction of the monumental fabric, to have an impact on economic, political, and religious history. Furthermore, it is evident that a quality leap is needed to integrate geographical, geomorphological, and environmental research. With this target in mind, it is clear the absolute need of a three-dimensional knowledge of the city, overcoming the traditional two-dimensional plans, which can neither document the superimposition of the phases, nor help to visualize the elevation of the buildings forming the armature of the city. Both these points are essential for an appropriate characterization of the various urban districts from a monumental and functional point of view. Furthermore, both in ancient and modern times the city underwent dramatic changes in its physical morphology: on the Caelian for example, I can mention the terracing for the construction of the *Castra Nova Equitum Singularium* and later the building of the Aurelian Walls that cut through existing small valleys and secondary rivers, causing a series of backfills in the following centuries. More recently, in some instances the existing difference in altitude has been softened, like in the Piazza Porta S. Giovanni or in the area to south of the basilica of S. Croce in Gerusalemme. As a result, the modern Caelian hill appears much flatter and more levelled in comparison with the ancient landscape.

A 3D approach to the topography of the city has some necessary implications. On one side the need of three-dimensional surveys of all the surviving structural evidence, with various methodologies, such as photogrammetry, laser scanning, structure from motion etc. On the other, the systematic employment of geognostic surveys for the subsoil, possibly integrated by drill core campaigns, in order to establish the depth and the thickness of the archaeological deposits. Finally, the development of one or more Digital Terrain Models corresponding to distinct transformations of the urban fabric of the city.

The first need – the 3D survey of the monuments – has its own methodological implications, but it is not specifically the focus of this conference. The second one, the knowledge of the buried city mainly through non-intrusive methodologies, is at the core of our meeting. The issue needs to be considered from two perspectives. The first, more obvious, is the technical aspect, and we have several esteemed colleagues in our conference, highly skilled in the field, willing to share with us many innovative and exciting experiences. The importance of this approach is self-evident. Regardless of costs, it is very difficult to have opportunities for extensive excavations in the densely occupied areas of the city and, when they take place, they generally come in the shape of rescue excavations linked to construction or to renovation works or to the setting up of public



facilities. Generally, they do not stem from planned academic research. Therefore, a systematic exploration of unbuilt, open areas such as gardens, parks, squares, and streets can provide, with a little bit of luck, a great amount of information. Even considering the unavoidable presence of areas lacking any surviving evidence because of the recent history of the city, or of disturbances due to multiple reasons, the result of these surveys, especially when different approaches are integrated, can provide at least some general information on the layout of the district that can be useful to understand the layout of the urban fabric.

The second point is not strictly academic but connected with the positive repercussions on the urban planning and management, offering an invaluable tool to the authorities responsible for the protection of cultural heritage to respond in a quick way to the urban development programs, limiting to the essential the slower and more expensive excavations of preventive archaeology.

To digress for a moment to a more general consideration of the Italian situation, which at the moment is quite critical. After a period when the protection system of the cultural heritage was quite strong and applied with rigour, in the last years the political orientation moved in the opposite direction. The last reform of the Ministry of the Cultural Heritage had an extremely negative effect: now the fragmentation of the territorial offices – the Soprintendenze – the shortage of their funding and staff, the weakening of the tools and of the procedures to control the territory are evident especially when under pressure for natural disasters – like earthquakes – or large development plans on the territory. At the same time there are growing difficulties in the collaboration between the Ministry of the Cultural Heritage and the Ministry of the University. I must be extremely clear to avoid misunderstandings. The collaboration between university departments and territorial offices is as good as ever and in our case is simply ideal: we always encountered full understanding for our needs and prompt and friendly cooperation from all the colleagues of the Soprintendenza. On the other hand, a series of subsequent ministerial circulars imposed increasingly stringent conditions to archaeological research for universities. The last one had a very strong impact just on non-intrusive methodologies, raising strong criticism and protest from the universities and embarrassing the colleagues of the territorial offices. A subsequent circular changed some details, slightly improving some of the most indefensible parts of the new rules, but in general the situation remains very critical both in principle and in practice. I hope these restrictive provisions will be removed, but at the moment there is no positive sign in this direction.

But it is time to go back to the topography of ancient Rome. The more articulated questions and the higher standards required by contemporary research have a series of implications. The range of different fields of research, the technical improvement in the survey, the amount of data to consider and to organize require research groups made up of specialists from several disciplines and well-defined programs, in order to bring together all the evidence in an organic synthesis. Last but not least, this great bulk of data and results need to be shared with the scientific community, preserved in an efficient way so that it can be used in future researches, and transferred both to the general public and to the authority responsible for the planning and the management of the city.

The topography of ancient Rome has always had in his DNA a methodological connotation and an interdisciplinary vocation. Since the beginnings, this field of study needed to face with cartography, architectural survey, structural analysis, philological analysis of literary and epigraphic sources, iconography, numismatics, archival research in a long-term perspective. As we have seen, this multifaceted approach is pushed far beyond the limits of the disciplines that a single researcher can master. Even if a lot of specific research can and must still be carried out by single researchers with high specialization, more substantial and innovative results need the establishment of close-knit research groups and the elaboration of integrated research programs. The goal is to build a methodological and technical frame, which can be replicated and progressively improved. In this way it will be possible to compare the results, to provide more comprehensive synthesis, but also to

obtain powerful tools enabling the authorities in charge for the protection of the cultural heritage and for the territorial development to respond in the most effective way to the urban evolution.

On the basis of these premises there are some consequences even for the more academic core of the discipline. The first task that the topographical study of Rome had to face was the reconstruction of the city plan, combining a rich but at the same time extremely fragmented literary and epigraphic evidence with the not less fragmented archaeological remains or with the traces and memories of the ancient monuments recorded during the centuries. After this unavoidable first step of the topographical research, the effort followed to reconstruct a narrative of the urban evolution, studying the social, political and economic functions of the various districts, exploring their religious and ideological connotations, the road network and its ceremonial use in the different periods.

At the same time there was a growing consciousness of the need to connect the classical and the medieval evolution of Rome in a single narration. In the past the two fields had a rigid separation only partially bridged by the specialist of the Early Christian archaeology.

What is now the task of the next generation of scholars in this field? Obviously, I do not have my crystal ball, nor do I pretend to outline the future of such a complex discipline. However, despite all, we can try to guess at least a couple of points where a progress is needed and is at hand.

First of all, in the future the need to document the city in a systematic way in its physical structure with a close attention to its morphology, placing the archaeological and monumental evidence in the three spatial dimension or, better, in the four dimensions (with time considered the fourth) will be more and more clear. Only in this way we will be able to advance beyond Lanciani's *Forma Urbis Romae*, which still after a century is the most comprehensive image of the city.

Secondly, we need to connect the urban research of the ancient periods to the later periods, until the modern times. We already address the *long durée* in excavations and in the study of the history of the buildings and of the urban evolution, but the tools for the study of the ancient urban planning are still limited in their potential. We still privilege specific moments and specific types of cities in the study of ancient urbanism: for example, the time of the foundation of Greek and Roman colonies, where we can recognize a clear plan, a project, an idea of city. But by no means can these notions pretend to represent the entirety of the ancient urban phenomenon and we still have very few tools to assess the urban transformation in later periods. Furthermore, if we compare books dealing with the ancient city with others concerning a medieval or modern one, it is nearly impossible to build a single story, because questions and methodologies differ completely, even if the cities, at least in part, are the same.

The difference of approach is mostly due to the fragmentary evidence the archaeologist has at their disposal for reconstructing the ancient urban fabric, compared to the rich cadastral documentation of the early modern cities. In the case of Rome, we have a little part of the cadastral map of the ancient city but, above all, we have an enormously rich body of evidence both from the archaeological excavations and the written sources. If correctly systematized, this evidence could give enough elements that would allow us to use, even if in a simplified way, some of the tools already well experimented in the studies of the urban geography of medieval and modern cities. I am referring to the so-called Urban Morphology: this type of approach could also be useful in some other instances, where we have extensive excavations like Ostia or in the study of the Roman cities of northern Africa.

In this way we could try to put an end to this meaningless division in urban studies, between the study of ancient and the modern times and develop a dialogue between the specialists of these two fields of research to bring together their different methods in a shared endeavour.