

KNOWLEDGE, ANALYSIS  
AND INNOVATIVE METHODS  
FOR THE STUDY AND THE DISSEMINATION  
OF ANCIENT URBAN AREAS



Proceedings of the KAINUA 2017  
International Conference in Honour  
of Professor Giuseppe Sassatelli's 70<sup>th</sup> Birthday  
(Bologna, 18-21 April 2017)

edited by  
Simone Garagnani, Andrea Gucci

ARCHEOLOGIA E CALCOLATORI

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*All'Insegna del Giglio*

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## RECONSTRUCTING THE ANCIENT URBAN LANDSCAPE IN A LONG-LIVED CITY: THE ASCULUM PROJECT – COMBINING RESEARCH, TERRITORIAL PLANNING AND PREVENTATIVE ARCHAEOLOGY

### 1. THE ASCULUM PROJECT. AIMS, METHODS AND LANDSCAPE

In recent years the University of Bologna has gained valuable experience in the field of archaeological impact assessment and development-led archaeology. This has been achieved within studies focused on the phenomenon of cities and urban life in antiquity, this being one of the long-standing lines of research pursued by the University's Department of History and Cultures (BOSCHI 2016a). Within this general line of investigation the Asculum Project was initiated as an agreed cooperation between the University, the former Soprintendenza per i Beni Archeologici delle Marche and the Municipality of Ascoli Piceno, primarily as a project of urban and preventative archaeology in a long-lived city.

Through that cooperation the Asculum Project aims to generate new knowledge and understanding about the past of this important city while at the same time playing an active role in the planning process within a functioning urban landscape, producing benefits for a wide range of interests and helping to reconcile the needs of preservation and research within the ambit of sustainable urban development.

The city of Ascoli Piceno is situated in the heart of the ancient region of Picenum within the valley of the River Tronto that provides a natural communication route by way of the Gole del Velino to the Tiber and thence to the Tyrrhenian side of the Italian peninsula. The city originated as the main settlement of the Piceni culture, during the Iron Age, at the confluence of the River Tronto and its smaller tributary the River Castellano.

The relatively flat area which saw the historic development of the urban center is now surrounded by the deeply recessed beds of the rivers Tronto and Castellano, the only natural access point being provided by the narrow corridor between the raised ground of the Colle dell'Annunziata and the river, where the *via Salaria* has represented the main approach to the town since Roman times and where the earliest parts of the settlement were located.

Following its initial foundation the city has remained in almost continuous occupation, in several places supporting standing buildings and other forms of evidence that help us to appreciate the town's evolution over the centuries. Indeed, many buildings and other structures from the medieval period survive in a reasonable state of preservation to the present day, giving us



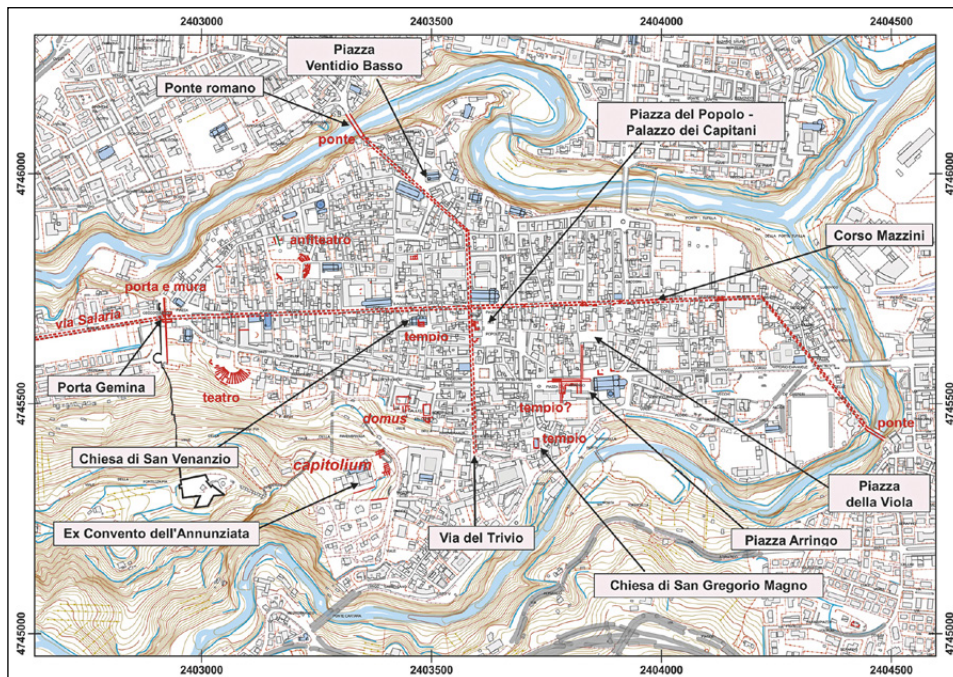


Fig. 1 – General plan of Ascoli with the main urban elements and ancient monuments. Elaboration: M. Silani.

within the open squares and half-hidden corners of the town a real chance to savour the atmosphere of the Middle Ages. Quite often these medieval structures incorporate well preserved elements of pre-existing Roman buildings, as at the church of San Gregorio Magno, lying directly above a Corinthian temple, or San Venanzio, sited above an Ionian temple. In other cases the foundations of the medieval structures have been shown during excavation projects to directly overlie the ruined remains of Roman buildings, as at the Palazzo dei Capitani in the Piazza del Popolo or at the Palazzo dell'Arengo in the piazza of the same name. In other cases elements of the Roman buildings are still visible today, as at the Porta Gemina (Porta Romana); some even remain in active use to the present day, as at the Sostruzioni dell'Annunziata and the Augustan bridges of Borgo Solestà and Cecco d'Ascoli.

Archaeological excavations in recent years have now been yielding significant physical traces of the ancient capital of the *Picentes*, well documented within the written sources for the area. This was the settlement that was initially the main ally of the Romans in resisting the Gallic advance at the transition from the 4<sup>th</sup> and 3<sup>rd</sup> century BC but it later became involved

in the rebellion of the *Picentes* against Roman domination in 267 BC. The traces of the allied city (*civitas foederata*) and the less evident Roman phase of the municipium, are now gradually emerging as a result of extremely important studies by the Soprintendenza delle Marche. Nonetheless, the form of the Roman colony still presents many unanswered questions, such as the location of the forum and of the capitolium (Fig. 1).

With the aim of answering these and others open questions the Asculum Project was started in 2012, adopting from its outset an integrated approach between new and old data from a variety of different sources including archaeological excavations, topographical and geophysical survey and geological and geomorphological analyses in order to reconstruct and interpret the ancient urban landscape and its successive transformations over the centuries (GIORGI 2016). The various data sources are managed within a GIS system which is directly supported by 3D modelling.

## 2. DISCOVERING THE HIDDEN TOWN

Within this integrated programme of exploration and analysis, geotechnical sampling and geophysics prospection have played important roles in revealing factual evidence about the buried archaeological deposits as well as contributing to our understanding of the natural setting within which the settlement was first established. Along with core sampling, a particularly important contribution has been made through the use of Ground Penetrating Radar (GPR) which has been widely applied for mapping work within the streets, squares and buildings of the modern town. This GPR work has revealed important information about the buried stratigraphy and has also enabled the discovery of buildings and elements of the infrastructure that once supported daily life within the early phases of the city's existence.

The complex nature of a long-lived city poses special challenges for investigation through the use of non-destructive methods, in particular the disruptive presence within the subsoil of metallic cables and pipelines. Despite this impediment, the non-invasive recovery at Ascoli of new data on the city's as yet unseen archaeological assets has been particularly impressive, especially within the present-day urban core and notably as the result of geophysical prospection.

GPR survey within several of the open spaces within the historical town, such as the Piazza della Viola and the Piazza del Popolo, has enabled the identification and mapping of entire sections of the hidden town, producing some remarkable amplitude slice maps (BOSCHI 2016b; GIORGI 2016). At different depths within these slice maps it is possible to make out internal roads, structures and buildings, interspersed with internal and external spaces that belong to the medieval and Roman phases of the city.

In addition to the systematic application of geophysics to investigate the subsoil deposits, the project has also been active in the 3D documentation of historic buildings that have survived to the present day, using laser scanning and photogrammetry in association with the analysis of structural stratigraphy and the study of building techniques and materials.

Within the present stages of the project use has also been made of 3D topographical survey by means of laser scanning, along with photogrammetric recording, in the study of the principal monuments of the Roman period preserved or incorporated within buildings of medieval and more recent times, as already noted at the churches of San Venanzio and San Gregorio Magno, as well as in structural elements of the Palazzo dei Capitani and the half-buried vaulting of the Sostruzioni dell'Annunziata. In all these cases, in addition to the detailed documentation undertaken for the purposes of architectural analysis, the work has produced an invaluable record of the state of preservation of the buildings prior to the widespread devastation caused by the most recent of the city's many earthquakes. In particular, at the Annunziata laser scanning allowed records to be made of the structures both before and after the recent seismic activity. The collected data, currently in course of processing, will facilitate a preliminary structural and architectural analysis of the damage and materials losses suffered during these events.

One of the most interesting aspects of the project comes from the interaction between the private companies routinely involved in the locality's emergency archaeology and the technical staff of the Municipality directly concerned with the redevelopment or rezoning of a number of urban areas. The ethos of the project calls for a constant dialogue between these participants in the day to day life of the city along with research staff at the University of Bologna and the officials of the regional Soprintendenza. This kind of cooperation will hopefully protect and emphasise the need for preservation and research within the city without adversely affecting sustainable urban development.

In this context significant investigations have been carried out along the Corso Mazzini and in the Piazza Ventidio Basso. In the first case geophysical survey was followed by archaeological excavation that brought to light many fragments pertaining to the urban stretches of the *via Salaria*. In the light of these investigations a conservation project is under evaluation for some of the most important stone-paved sections. At the Piazza Ventidio Basso the GPR investigations served as a guide for subsequent trial excavations and further phases of the continuing renewal work within this important urban area (Fig. 2). Here we can recognize the ancient medieval market area, once called *Platea Inferior*, located between the church of San Pietro Martire, the church of the Santi Vincenzo and Anastasio and the now-destroyed oratory of San Rocco. These recent archaeological investigations have enabled the

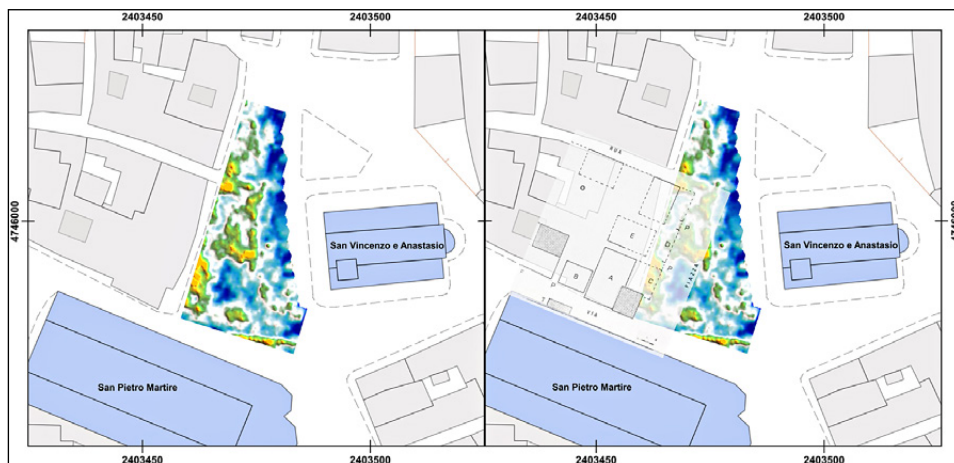


Fig. 2 – GPR survey in Piazza Ventidio Basso (depth of the slice-map: 0.60-0.80 m): on right, overlapping with an archival document (from SESTILI, TORSANI 1995) which attested in the medieval period the presence of structures in correspondence of some radar reflections. Elaboration: F. Boschi.

identification of the main building phases and brought to light an area of burials (including medieval tombs) while at the same time demonstrating the presence of perhaps rarefied Roman occupation in the raised area overlooking the rest of the city.

New survey and research work has been carried out in the vicinity of the churches of San Gregorio Magno and San Venanzio with the aim of securing detailed 3D documentation of these historic buildings and better contextualizing the ruins of the Roman temples that they incorporated, these obviously being important elements within the urban fabric of the Roman colony. Noteworthy scientific results have also been obtained in the areas of the Piazza della Viola, the Piazza Sant'Agostino, the Piazza Arringo and the Piazza del Popolo, all of them important open areas within the city. In every case efforts have been made to understand and explain the development of these urban areas, evaluating the changes that occurred over time and illustrating them through the medium of reconstruction drawings (GIORGI 2016).

Obviously, in contexts such as these historic squares, surrounded by prestigious monumental buildings, geophysical prospection constitutes the most sustainable method of revealing hidden archaeological evidence while at the same time serving as a useful preparation for future projects of urban renewal such as those already undertaken at the Piazza Ventidio Basso.

The results achieved in the Piazza del Popolo are of particular interest. Here the integration of archival studies, historical cartography, geophysical

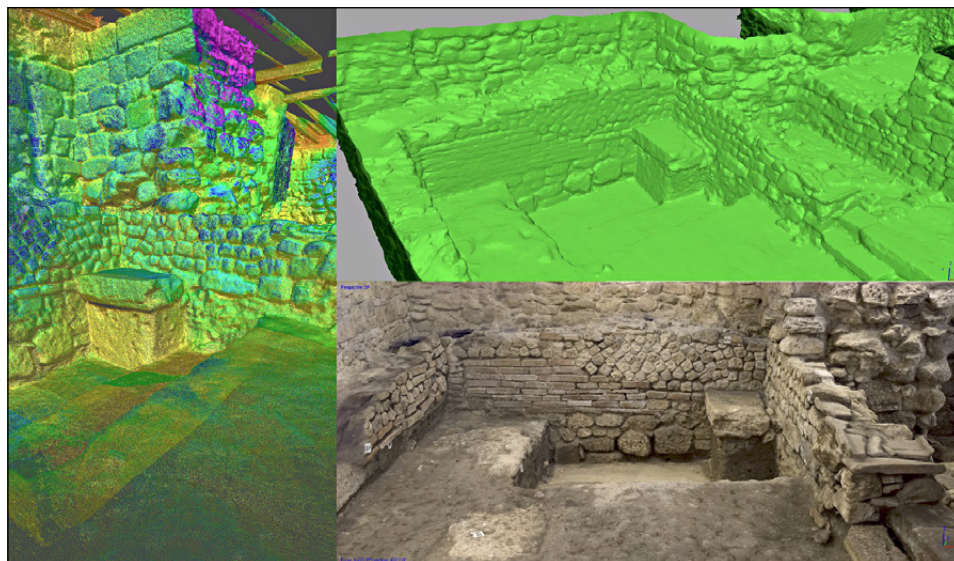


Fig. 3 – Roman structures under the Palazzo dei Capitani. Photo and laser scanning survey 2016.

data and archaeological evidence from excavations carried out beneath the flanking Palazzo dei Capitani led to the identification of various evolutionary phases of the main town square and to the critical rethinking of some hypotheses regarding the location of the forum of the Roman city. The square and the adjacent palace are located near the intersection of the Via del Trivio and the Corso Mazzini, the two alignments considered by most scholars have given rise to the orthogonal layout of the Triumvirate-Augustan colony. For this reason the area was suspected to be the possible location of the forum square. After a phase of intense removal of building material prior to the construction of private buildings in the Middle Ages, the present square was created by demolishing the medieval structures. In the early phase, dating on documentary evidence to the second half of the 13<sup>th</sup> century, the so-called *Platea Superior* occupied only half of its current space. Later, in the second half of the following century, the houses and a tower in the northern section were demolished. At the same time the palaces of the nobility that lined the western side were unified into the complex of the Palazzo dei Capitani, more or less coinciding with the line of the present-day facade, while along the northern side a start was made on the great building site of the Convent of San Francesco.

In the archaeological levels under the Palazzo dei Capitani these construction phases can be quite easily recognized (Fig. 3). The Roman structures,

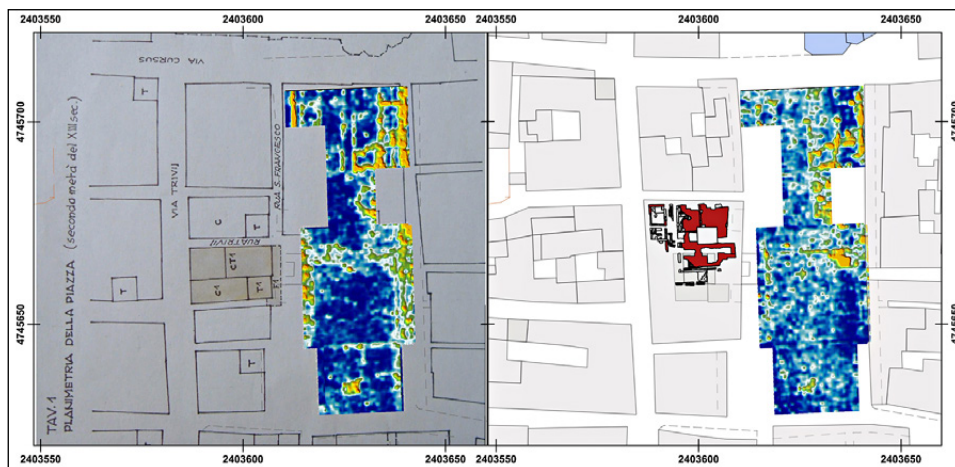


Fig. 4 – GPR slice-maps of Piazza del Popolo and integration with cartographic and archaeological data related to the flanking Palazzo dei Capitani.

recently suggested to have been a *macellum*, are directly overlain by the medieval buildings which support the palace of more recent times.

This painstaking analysis, integration and depth-comparisons between the deposits uncovered in the excavations at the Palazzo dei Capitani and those recorded in the geophysical data from the adjacent Piazza del Popolo (Fig. 4), have been supplemented by a programme of laser scanning of the recently revealed archaeological evidence; the whole then being related to the GPR slice maps within a three-dimensional environment. This integration is supporting the interpretation of the geophysical data as well as assisting our understanding of the sequence of building phases, drawing on the three-dimensional and volumetric representation of the whole below-ground environment.

On the basis of this work it is possible to recognize a level, only about half a metre beneath the present surface of the piazza, within which there can be recognised the wall lines of the medieval buildings demolished to allow the creation of the square. Deeper down, at about a metre and a half beneath the present surface, a number of other features become evident and in part persist until a considerably greater depth. These deeper radar reflections can be attributed to the Roman phases attested at similar depths in the archaeological excavations nearby. Granted that these are preliminary data, still under study, it seems clear that their interpretation will be fundamental in establishing, or perhaps disproving, the existence of the forum at this point in the urban fabric.

In an initial analysis, still absolutely open-ended, we can see some main issues relating to this possibility. First and foremost it appears that some GPR

reflections are present at every depth within the area so far examined. This could be due to the already recognised dynamism of an urban context in which the foundations of the present-day buildings directly overlie the medieval and Roman levels. Elsewhere the slice maps show meaningful responses only at the deepest levels which could therefore belong to the Roman phase already evidenced at a comparable level in the archaeological stratigraphy.

For the moment it is difficult to go much farther than this. In a very preliminary way it can be noted that in antiquity few parts of this area seem to have been devoid of buildings, not something that one would expect if it had accommodated the open central space of a forum. If this reconstruction turns out to be correct it may be necessary to search for the forum at some other location beneath the cityscape of the present day.

### 3. NEW LINES OF RESEARCH AND FINAL REMARKS

A significant contribution within the present range of investigations could come from reconstructing the natural environment at the time when the *Piceni* occupied this area before the establishment of the Roman settlement. Analytical work in the identification and interpretation of a wide range of data sources, through a combined archaeological-geological-geomorphological approach, is already under way with the aim of creating a topographical reconstruction of the original paleosurface that would have influenced the settlement choices made both by the pre-Roman occupants and then by the founders of the Roman colony.

A preliminary reconstruction has been created through the integration and interpolation of data and contextual information from both published and unpublished archaeological excavations and hand-dug and mechanical trials, allowing us to hypothesize the general appearance of the ancient paleosurface. The stratigraphical information has been systematized within a GIS database. Specifically, the Digital Surface Model has been obtained by subtracting from the present ground level the depths of all of the deposits attributable to the first period of Roman occupation, giving an estimated level of the paleosurface with respect to the present-day sea level.

This is still work in progress, necessarily subject to revision and updating on the basis of any new information that accrues in the future. While only representing indicative information at this stage it has a particular relevance because it provides a preliminary sketch of the geomorphology that was subsequently modified by human activity over the passage of time – a sort of “zero level” which can be useful in our attempts to understand the choices and dynamics that influenced the formation and development of the ancient city and its wider physical surrounding. Within this perspective the integrated work can also support the reconstruction of the natural

environment and the general landscape setting in which the settlement was first founded, and within which it continued to flourish over the following centuries<sup>1</sup>.

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## ABSTRACT

The Asculum Project started in 2012 by the Bologna University in agreement with the former Soprintendenza per i Beni Archeologici delle Marche and the Municipality of Ascoli Piceno, mainly as a project of urban archaeology and preventative archaeology in a city which has been inhabited for a very long period of time. A proper integrated methodological and the combination of a wide range of data, including that gathered from geophysical surveys, archaeological digs, historic cartography, bibliographic and archival data, allowed us to reconstruct the cityscape during the Roman Age and its development over the centuries. The understanding of the ancient urban landscape also included a detailed morphological study aimed at the reconstruction of the Roman paleosurface, carried out using data derived from coring samples and stratigraphic digs. In parallel, particular attention was directed to the modern 3D documentation of the historical buildings of the city, by means of laser scanner and the analysis of the stratigraphy of the surviving walls. The new surveys covered, in particular, the still extant Roman buildings, such as the temples incorporated by the churches of San Venanzio and San Gregorio Magno, as well as the Sostruzioni dell'Annunziata. These last acquisitions made it possible to reconstruct the overall layout and urban plan of the town during the Roman Age, as well as to shed new light on the conformation of the ancient landscape at the time of the oldest *Piceni* settlement. One of the most interesting aspects of the operating practices applied in the project was to reconcile the needs for preservation and research with the aim of a sustainable urban development.

<sup>1</sup> The texts of the present paper derive from the teamwork of the three authors, who worked in synergy. The first paragraph is due to Enrico Giorgi and the final one to Michele Silani. The central part of the article, entitled *Discovering the hidden town*, is due to Federica Boschi. The included images were elaborated by Federica Boschi and Michele Silani. The authors are very grateful to Chris Musson, who reviewed an earlier version of the manuscript and provided many useful comments.



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