

# The Contribution of “Light” Archaeology to the Study of Fortified Sites in Northern Syria

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## The Project (GV)

A new archaeological project has been recently started by a joint team from the University of Florence and the University of London, entitled *Islamic Syria and Latin Kingdoms: a Mediaeval frontier. Settlements and interaction in the 12th and 13th centuries A.D.*<sup>1</sup> This project aims at analysing settlements, territories and fortified systems on both sides of the frontier in the coastal plain of Syria and in the Orontes valley. In this context, the frontier acquires the significance of an “observatory” on the interaction (for example, in relation to settlement modes, control of territory, exploitation of natural sources, and exchange of technology) between west European feudal society and Islamic society in the twelfth and thirteenth centuries (Figure 1).<sup>2</sup>

In the Near East, research topics such as the transformation of settlement in the period under consideration and the origin of fortifications do not seem to have been adequately developed. To date, the archaeological study of this period has mainly concerned standing

1. The Italian team was funded by grants from the Ministero dell’Università e della Ricerca Scientifica e Tecnologica and from the Ministero degli Affari Esteri. The Italian Embassy in Damascus provided in many ways advice, help and assistance, in particular H. E. the Ambassador Antonio Romano Napolitano. The Syrian Embassy in Rome kindly gave the team complimentary entry visas. The team wishes to thank the Directorate General of Antiquities for providing the assistance of Architect Asmahan al-Wazza during this phase of fieldwork. The team also wishes to thank the Institut Français d’Etudes Arabes de Damas and its Director, Professor Mallet, for the hospitality they provided. The results presented here relate to the campaign conducted in May 1999. The team consisted of the two authors, Professor Guido Vannini (GV) and Dr Cristina Tonghini (CT); Dr. Eugenio Donato, who also played a very important role in the analysis of the wall typology; Architect Asmahan al-Wazza, from the Department of the Antiquities. A first preliminary survey had also been conducted in November 1998. During that campaign the team also included, together with the present writers, Professor Hugo Blake (Royal Holloway, University of London) and Professor Franco Niccolucci (Università di Firenze).
2. Islamic culture can be considered the heir of Late Antique urban Mediterranean society in terms of social and territorial organization, although with well-known variations. In this setting, especially in the case of marginal areas (part of or close to the original desert environment), there are occasional swings towards the re-emergence of the nomadic or semi-nomadic way of life. This situation seems to characterize the Islamic side of the frontier in the two regions considered by our Mission: in southern Transjordan, and in the current project in Syria between the twelfth and thirteenth centuries. See, in general, Lombard 1980; Lapidus 1993.

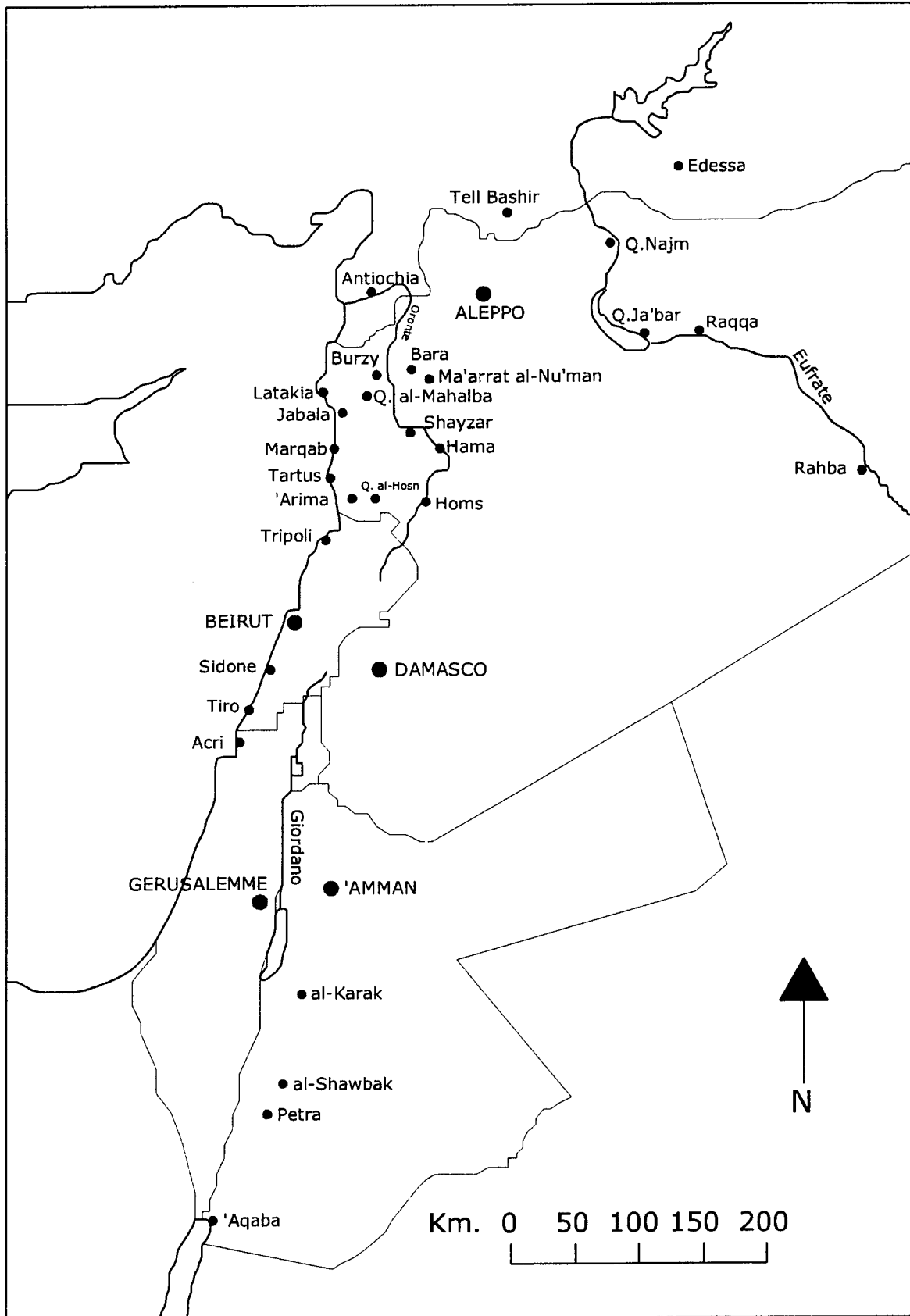


FIGURE 1. Map of Greater Syria showing the location of the sites mentioned in the text.

castles and town walls in the areas controlled by the Crusaders. Detailed studies of these monuments have been undertaken, but the aim of the work carried out in the first decades of the 20th century significantly differ from the aim of present day research. For example, the analysis of standing features has been architectural rather than archaeological, while no work has been undertaken on the contemporary environment.

The idea of this project proposal had been conceived in the light of the results achieved in the course of an archaeological project which had been carried out in Transjordan by a team of the University of Florence.<sup>3</sup> This project aimed at studying the Islamic-Latin frontier at the edge of the Arabic desert, and focused on the system of fortifications of the Petra valley (Figure 1). More specifically, the goal of this research was to investigate and record on an archaeological basis the "caractères originaux" of the Crusader presence in the Holy Land of the twelfth century, while the Syrian project aims at extending the analysis to both sides of the frontier and to include the second phase of Crusader occupation up to the thirteenth century.

The methodological developments that have characterized archaeological research on Mediaeval Europe (so-called "Historical Archaeology") were adopted for the project in Transjordan. Specific methodological strategies and field techniques were developed and tested in the course of this research. They proved to be highly productive for approaching this type of research topic and provided the team with the necessary tools for further developing the research into other areas characterized by a similar historical setting.

The methodology selected for this project involves the strategic employment of a system of territorial analysis modelled on so-called "light archaeology". It is a system based on the integrated use of non-destructive (and in a broad sense economical) investigative methods standard in Landscape Archaeology,<sup>4</sup> more specifically Environmental Archaeology and the Archaeology of Masonry. The system is characterized by the unifying role played by Information Technology,<sup>5</sup> in relation to:

- the collection and processing of data (as it normally occurs);
- the setting up of specific research tools that can guarantee standardization on the one side and flexibility on the other, in the sense that they can be adapted to different contexts (a site/a topographic unit) and logistic situations (time, resources, and available skills).<sup>6</sup>

The system offers a high degree of generalization: a single aspect or problem can be analysed, such as the origin of fortified settlements. It aims to establish an integrated documentary series (for example, in the form of atlas) based on the material sources recorded stratigraphically either at a site or in a given territory. In this way, for instance, a chronotypology of masonry techniques established on the basis of a stratigraphic analysis of above-ground archaeology constitutes a systematic data-base on one hand and a tool to investigate the territory (in terms of cultural environment) on the other, and facilitates the identification of exchange and influence between different areas.

The Archaeology of Masonry can provide a detailed analysis of building phases for single structures (towers, palaces) as well as for more complex settlements (castles, urban areas)

3. See Vannini and Tonghini 1997; Vannini and Vanni Desideri 1995; see also the web site of the project: [www.unifi.it/project/petra/](http://www.unifi.it/project/petra/)

4. The most widely employed manual in Italy is Cambi and Terrenato 1994.

5. See, for example, Crescioli and Niccolucci 1999; Crescioli et al. *fc.* Specialist co-operation in the field of Information Technology and in the development of new techniques for surveying is provided by ITABC, the CNR Institute at Montelibretti-Roma, directed by Professor Salvatore Garrafo, in particular by Dr Roberto Gabrielli.

and can provide an articulated interpretation of the evolution of a site or of a homogeneous territorial system.<sup>7</sup> The study of the finishing of stones has proved to be a productive way of analysing a structure and to investigate the cultural context within which the builders operated.

Traditional excavation procedures can also be undertaken, but more in the sense of a further development of research perspectives: to clarify problems related to the analysis of the upstanding fabric (sondages), and to provide data on specific topics identified in the course of the research (“open areas”).

The research in the field is cross-referenced in several places: with the application of the methods of Landscape Archaeology a number of structures in a given area (isolated or within a more complex settlement) are selected and their stratigraphy is analysed and recorded (USM recording sheets and others, see note 6). These structures are specifically selected to provide a relative chronological sequence of walls and to illustrate their technological features (building techniques in general, stone cutting techniques, surface finishing, identification of the tools employed, etc.). In a second phase, this kind of analysis is extended to the territories selected for the research and it is applied to a series of cases which can be considered a representative sample in relation to specific storiographic topics; the evidence is systematically classified in a masonry chrono-typology on the basis of which articulated atlas of the documentary series can be established.

### **The 1999 Season: The Results (CT)**

The first phase of fieldwork for this project started in May 1999 with a preliminary survey. The aim of the first phase was to evaluate the potential of the available archaeological evidence in relation to the aim of the project, and to test the feasibility of applying and exploiting the field methodology proposed.

This preliminary survey did not attempt a systematic recording of data or a detailed analysis of a given territory, but rather set out to consider as wide a variety of sites as pos-

6. Information Technology plays a fundamental role in the strategy of the project. All kinds of the data collected (descriptive, graphic and photographic) can be filed in an integrated system based on a variety of recording sheets. Depending on the degree of analysis required, a wide range of recording sheets is available, all integrated with each other in an Information Technology System. The Site Recording Sheet (Scheda di Sito) is meant for recording a first examination of a given site. On this form, information concerning the site in general can be recorded, including, for example, a short description, a first evaluation of the geological formation, the use of the land, etc. and the strategy for future investigations at the site. The next level involves the study of above ground archaeology with the Topographic Unit Recording Sheet (Scheda di Unità Topografica): a first identification of the various areas—characterized by a certain unity in terms of function, features, etc.—is made, and they are recorded, mapped and described. Within these areas, subsequently, each structure which seems to constitute a “building unit” is recorded and analysed in the Building Unit Recording Sheet (Scheda di Corpo di Fabbrica). For a more detailed analysis of the phases of construction occurring in a given structure and an analysis of the building technology the Masonry Stratigraphic Unit Recording Sheet (Scheda di Unità Stratigrafica Muraria) is employed. On it is recorded a detailed analysis of a given Masonry Stratigraphic Unit, while a Matrix illustrating the relationship among the various Masonry Stratigraphic Units (of the same kind used for excavations) provides an interpretative illustration of the various Masonry Stratigraphic Units—grouped by phases—which are present in a given structure. All Recording Sheets can include graphic and photographic documentation, in a fully integrated system.

sible in order to collect those elements which would be essential in setting up a future research strategy. However, in the course of this preliminary survey, data were collected according to the methodology adopted by the project, and thereby constitutes a first step towards the construction of a database, and will integrate perfectly with research developments in the future.

The sites visited in the course of this preliminary survey were selected according to the evidence available in the relevant literature, which is mainly historical or related to architectural studies, rather than archaeological. The sites were selected primarily in consideration of the role they had played in relation to the Islamic–Crusader frontier of the twelfth and thirteenth centuries (Figure 1). As much as was possible, an attempt was made to explore a broad variety of sites in terms of location, size, function and building styles. These included sites characterized by a continuous occupational sequence, including fortifications with the features of urban sites (Shayzar) as well as citadels within towns (the citadel of Ma'arra) (Dussaud 1927: 187–190); sites which were abandoned at some stage in the Middle Ages on both sides of the frontier, such as Qal'at Abi Safiyan (Deschamps 1973: 313–316; Kennedy 1994: 68–73), Qal'at Burzy (Deschamps 1973: 345–348), Qal'at Mahalba (see for example Deschamps 1973: 339–340; van Berchem and Fatio 1914: 283–288) and Qal'at 'Arima (Deschamps 1973: 313–316; Kennedy 1994: 68–73); sites where the characteristics of the twelfth century building methods could be expected to be better identified because of an early abandonment (such as Qal'at Burzy); sites where the thirteenth century could be expected to be clearly studied (such as 'Arima), and even sites where a number of building phases could be dated in absolute terms because of the presence of inscriptions (such as Shayzar).

Because of the preliminary nature of this field operation, landscape and environmental archaeology investigations were not attempted at this stage; extensive areas in connection with a number of the sites visited were surveyed to plan this part of the research. To illustrate the methodology adopted by the project and the Archaeology of Masonry in particular, and some of the results achieved, this paper will discuss the case of Shayzar.

### Shayzar

This site was selected because of its strategic position guarding the Orontes valley, notably a bridge over the river, communication routes and access to Hama (Figure 1), and because it seems to represent a very good example of a complex multi-stratified archaeological deposit. The abundance of Mediaeval written sources dealing with this site makes it a par-

7. The Archaeology of Masonry consists of a scientific methodology of stratigraphic analysis of up-standing fabrics employed in a number of archaeological schools in Italy; it differs distinctively from the traditional architectural analysis of structures, although it can be interrelated with it. Extensive research in this field in Italy has been carried out by: Tiziano Mannoni, who can also be considered the first scholar to test the productivity of this method, especially in Liguria; in Lombardia by Giampiero Brogiolo (see Brogiolo 1988); in Tuscany by Roberto Parenti (who is also responsible for the specialist journal on this subject *Archeologia dell'Architettura*) and by Fabio Redi (see Redi 1989). Research in this field has also been conducted by the Insegnamento di Archeologia Medievale, Università di Firenze, in north-central Tuscany, Calabria, Corsica and Jordan, with a specific historiographical approach and by attempting further methodological developments. In this project, Environmental Archaeology is the specific competence of the team from the University of London, while the Archaeology of Masonry is the specific competence of the team from the University of Florence.

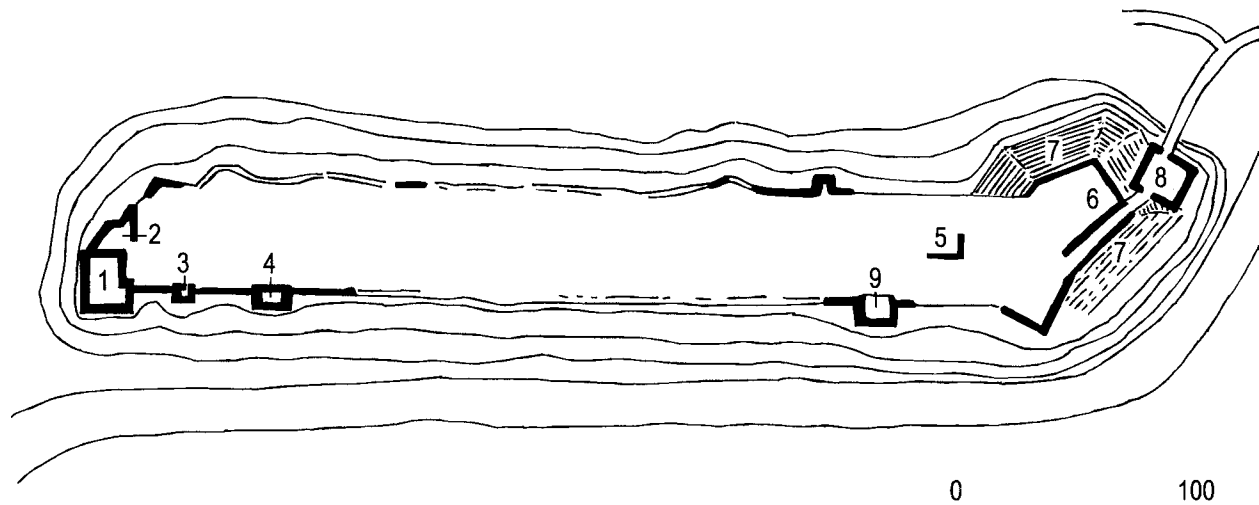


FIGURE 2. Shayzar: sketch-plan with the identification of the Building Units (CF) (redrawn after van Berchem and Fatio 1914).

ticularly appealing case for attempting an integrated study of its historical and archaeological phases as a whole (see Usama a and Usama b.) Moreover, the presence of a number of inscriptions in some of the main structures allows us to date in absolute terms some of the wall typologies occurring at the site (Deschamps 1973: 345–348).

The access system to the castle, at the northern edge of the rocky ridge over which the castle sits, illustrates well some of the major phases which occur at the site and their stratigraphic relationship (Figures 2–3). Three major building phases have been observed here and preliminarily recorded and analysed.<sup>8</sup>

#### *Phase I*

The remains of a structure with a rectangular plan (CF 6, Figures 2 and 4) and other related structures (for example a floor and an entrance system) have been observed south of the present access structure. It is characterized by a wall typology built in squared large blocks in horizontal and parallel courses, with occasional snecking (Shayzar type 1, cf. Figures 4 and 7). It probably relates to an early phase of the castle and constituted part of the ancient access to it. It clearly needs further investigation and a detailed mapping of the various structures. The remains of other structures similar to the one described have been observed at other locations within the castle; a detailed analysis of these may permit a hypothetical reconstruction of an earlier fortification.

#### *Phase II*

Phase II is represented by a glacis-structure and a gate (CF 7, Figures 2–5, 7). This system consists of a gate, built with ashlar (re-employed blocks are present) and still used as the present gate, and a glacis-like structure which covers the cliff, built in ashlar as well, bonded to this gate (Shayzar type 3, Figures 5, 7). The glacis clearly abuts the rectangular structure of Phase I (CF 6, Figure 4), which becomes incorporated in the new access system. In its turn, CF7 is included in the following transformation of the gate (CF 8, Figure 3).

8. In the course of this preliminary survey no digital techniques have been employed, and an adequate mapping of the site is not available yet. For this first approach, the map sketched by Van Berchem and Fatio was adopted (Figure 2).



FIGURE 3. Shayzar: the gatehouse from the northwest.

Because of the stratigraphic relationship with the last phase of the gate, it can be assigned a 1291 *terminus ante quem* (see *infra*).

### *Phase III*

Phase III consists of the present gatehouse which abuts and incorporates the previous access systems (Figures 2–3). The ashlar wall, which also presents rustication, and the use of columns laid in section (Shayzar type 4, Figures 3, 7) is dated by an inscription which attributes this work to sultan Qala’un (10 July 1290).<sup>9</sup> According to the sources, however, major repairs were undertaken by Baybars in 1261, and do not mention Qala’un’s work; the possibility that this inscription had been re-carved should be taken into consideration until further investigations are made. The issue is complicated by the presence of yet another inscription on the southern building (CF 1, Figures 2 and 6). The wall typology is very similar to that of the gate CF 8, and presents a number of other occurrences at the site, in particular in three of the towers of the eastern curtain wall (Figure 2, CF 3, 4, 9). In the southern building the inscription, in phase with the building, attributes the construction to sultan Malik Aziz Muhammad, 29 August 1233. In this case van Berchem observes that the inscription was carved after the laying of the blocks and therefore he expresses his doubts about the real dating of this structure (van Berchem and Fatio 1914: 186). Only a careful

9. The use of columns set in the walls is a well-known practice in the military architecture of the Islamic Near East, especially used from the end of the eleventh century. See for example Creswell 1952: 113–114.



FIGURE 4. Shayzar: CF7 abuts CF6.



FIGURE 5. Shayzar: wall type 3.





FIGURE 6. Shayzar: CF1 and CF2..

examination of all these structures will allow a more conclusive interpretation. At this stage, the team could only notice the similarity of the techniques in the southern building and in the northern gate (respectively CF 1 and CF 8, Figures 2–3 and 6), the occurrence of similar techniques in a number of towers (Figure 2, CF 3, 4 and 9), and the stratigraphic relationship among CF 8 and a previous access gate (CF 6 and CF 7, Figures 3–4).

Historical sources attribute major construction work to Nur al-Din (1171, after the 1157 and 1170 earthquakes) and to Baybars, around 1261, but do not mention the 1233 and 1290 restorations discussed above.

Another phase has been detected in relation to the southern building mentioned above (Figures 2, CF 1 and 6). It is a structure which CF 1 seems to abut, and therefore, in the light of the evidence available now, this should be assigned a 1233 *terminus ante quem*. The wall typology is different from the others, and it consists of roughly hewn large blocks laid in courses with abundant use of snecking (Shayzar type 2, Figure 7).

This masonry typology has also been observed at Q. Burzy in the curtain walls which correspond to the twelfth century Crusader phase; it can be distinguished by walls built with roughly hewn blocks laid with extensive use of snecking (Q. Burzy type 2). This technique seems in fact to characterize the twelfth century Crusader building phase, since it has been noted at other sites, such the fortress of al-Wu‘ayra in Jordan and ‘Arima on the coast. At Shayzar, in the light of the present evidence, this building technique can only be attributed to a local tradition.

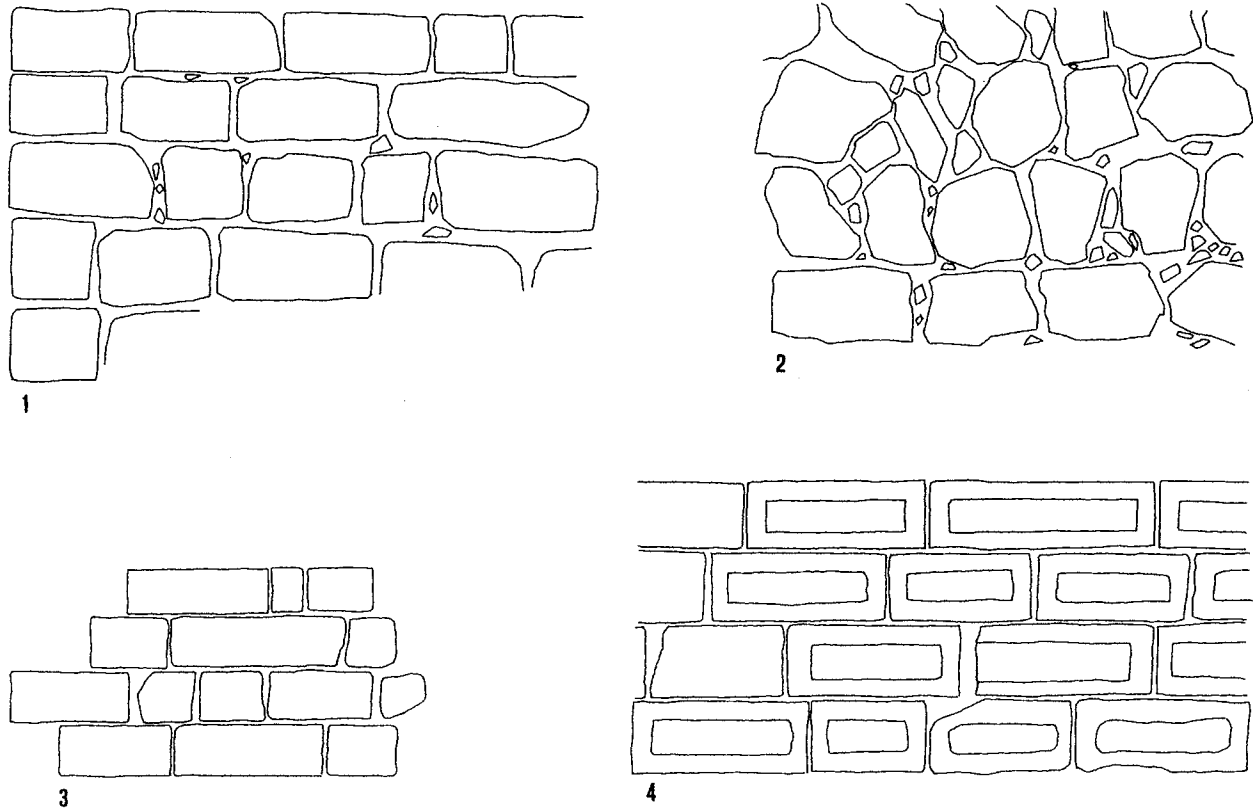


FIGURE 7. Shayzar: preliminary wall typology.

### Conclusive Observations (CT and GV)

This survey phase of the project, briefly outlined here, will continue on regions and sites of the coastal plain and in the Orontes valley. Subsequently, a more systematic analysis will be conducted on two sample areas for the second phase of the research.

What emerged conclusively from this first phase of the research is that the regions under consideration are today facing a period of major transformation. Mediaeval monuments, in the general sense of the word, are being modified, partly as a consequence of the growing interest (and of the new resources) which tourist development has created. Above ground evidence seems to be exposed to a greater risk than archaeological deposits. Therefore, it is probably urgent to concentrate on this kind of evidence. The more cost effective and less destructive methods of light archaeology may acquire a prominent role in the rapid recording of evidence that is about to be lost through monument conservation.

### APPENDIX: Shayzar—Masonry Typology (Figure 6)

#### *TYPE 1 (Figures 4 and 7)*

Squared blocks laid in horizontal and parallel courses; snecking of small size in the bed joints in most cases. The finishing of the stone surface preserves marks left by a tool provided with teeth, but also by a tool with flat blade.

This type of wall is probably built with a core, but no part of it was exposed. Quoins are unstressed, and built with the same alternating blocks that constitute the rest of the wall. Remains of plastering have been noticed in the joint beds and perpendicular junctions.

*TYPE 2 (Figures 6–7)*

Roughly hewn stones of medium and large size, laid in courses (approximately horizontal and parallel), with extensive use of snecking in both the bed and perpendicular joints.

Thickness of walls is generally remarkable (approximately two meters). The wall has a core built with rubble stones of variable size, laid according to the courses of the faces. The internal face is built as the external one.

For quoins, arches, pilasters, lintels, etc. well finished, squared blocks are employed. A tool equipped with teeth is used for the finishing of stones.

The use of columns placed horizontally, across the section of the wall, occurs only rarely (this is a characteristic of type 4).

*TYPE 3 (Figures 5 and 7)*

This type of wall constitutes the so-called glacis-structure, and it is in fact a scarp wall. It is built with squared blocks laid in horizontal and parallel courses. The core is built with rubble stone of small and medium size set in abundant mortar. The surface of the blocks is not perfectly even, and shows marks of a tool provided with a point (chisel). In some cases the surface is very well finished and even.

This scarp wall is set either directly on the bed-rock or on pre-existing structures.

*TYPE 4 (Figures 3, 6 and 7)*

Built with perfectly squared blocks of medium and large size, laid in parallel and horizontal courses. On the external face, a percentage of the blocks presents rustication; the laying of blocks with rustication does not seem to follow a precise pattern.

On the internal face the use of blocks with rustication disappears entirely. The wall is built with a core of rubble (small and medium size stones) set in mortar and built to courses.

A number of courses present columns (re-employed) set horizontally across the section of the wall, very likely with a specific function of increasing the solidity of the wall as well as serving aesthetic purposes. A number of these columns are slightly projecting from the wall, while others are perfectly aligned with the rest of the wall; whether this difference is caused by successive restoration work it is not clear at present.

The surface of the stones is well finished with a tool provided with teeth (at least ten); on the rustication work there are traces of a pointed tool (chisel or pick). Marks of masons have been observed on the external gatehouse wall (CF 8, Figure 3).

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*Proceedings of the 2<sup>nd</sup> International Congress on  
the Archaeology of the Ancient Near East*

22-26 May 2000, Copenhagen

ALMA MATER STUDIORUM – UNIVERSITY OF BOLOGNA

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SPECIAL ISSUE

DEPARTMENT OF HISTORY AND CULTURES

*Proceedings  
of the  
2<sup>nd</sup> International Congress  
on the  
Archaeology of the Ancient Near East*

22-26 May 2000, Copenhagen

Volume 2

Islamic Archaeology, General  
Islamic Archaeology, Symposium

Edited by  
Ingolf Thuesen

Department of History and Cultures, University of Bologna / Eisenbrauns  
Bologna  
2016

OrientLab. Special Issue

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Jointly published by the Department of History and Cultures and Eisenbrauns

Department of History and Cultures, Alma Mater Studiorum – University of Bologna

[www.disci.unibo.it](http://www.disci.unibo.it)

Eisenbrauns Inc., Winona Lake, Indiana

[www.eisenbrauns.com](http://www.eisenbrauns.com)

ISBN 978-88-6113-006-7

doi: [10.12878/orientlabsi2icaane-2](https://doi.org/10.12878/orientlabsi2icaane-2)



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