

Pietro Ruschi
Università di Udine
Italy

Guido Vannini
Università di Firenze
Italy

Pietro Ruschi and Guido Vannini

The Fortified Crusader-Ayyubid Settlements in the Petra Valley: A Study for a Project of Restoration¹

1. Mediaeval Petra: A Research and a Project

The site of al-Wu'ayra, famous for the presence of a small Crusader castle,² is becoming one of the most interesting and outstanding archaeological areas of the region and potentially able to express significance and historical and archaeological values comparable to the most important ones present in the nearby Valley of Petra.

The results obtained by the Italian Archaeological Mission, already allow us to consider the area of al-Wu'ayra as the centre of a complex system of observation and protection of the main accesses to Petra, thus making its occupation and control very important (FIG. 1).³

The archaeological analysis, and the topographical read-

ing of the valley of medieval Petra have outlined a Crusader facies of a western presence in this area and from here to the Transjordanian region — the only area that for historical reasons has preserved clear characteristics of the first European settlements in the Holy Land.

The philological reconstruction of the complex material traces of settlements and Crusader presence, using special methods of 'global' archaeology (analysis of the stratigraphy of the walls, archaeology of the landscape, archaeometry) can be the documentary basis for a number of structural, monumental and environmental operations — that aim at conservation and involve a number of sites.

The conservation aim of this project must correspond with the creation of a recognized system — able to inform by means of a documentary apparatus and with the aid of information systems that aim at a critical reconstruction of the site and the fortifications, in relation with settlements comparable in different ways.

As regards directly to the program of conservation, restoration and exploitation hereby presented, we can observe that at the moment we have a large amount of documentary material that gives us a scientific basis, philologically ascertained to accomplish the selected operations that will be necessary. On the other hand, the very process of archaeological exploration we are expecting to carry out, can easily be extended to acquire new information that could be useful to the program of exploitation. This program will be carried out with a series of specific operations on some of the constructions of particular architectural interest and with the requalification of the ar-



1. The al-Wu'ayra castle, key to the access system of Petra.

¹ This paper relates to the project of University of Florence, Ministero dell'Università e della Ricerca Scientifica e Tecnologica ('Ricerca scientifica di rilevante interesse nazionale', 1997/8 dedicated to 'Settlements of the Crusader-Ayyubid Period in Transjordan', in cooperation with the Ministero degli Affari Esteri (direttore di missione Guido Vannini). Parts 1 and 2 are by G. Vannini, 3 and 4 are by P. Ruschi; translation by Barbara Salvadori. The photographs are by Anna Marx (FIGS. 1, 2, 4, 11, 12, 14, 16, 18, 19), Mario Frau (FIGS. 5, 7, 10), Guido Vannini (FIGS. 8, 9, 13, 15), Pietro Ruschi (FIG. 20); drawings are by Tommaso Zoppi (FIG. 3), Riccardo Berretti, Stefano Bertocci e Pietro Ruschi (FIGS. 6, 17, 21).

² Recently, the castle has been studied briefly for the first time by H. Savignac, *Ou'airah*, *RB* 12, 1903, pp. 114-120; see also G. Vannini and A. Vanni Desideri, Archaeological research on medieval Petra: a preliminary report, *ADAJ* 39, 1995, pp. 1-32.

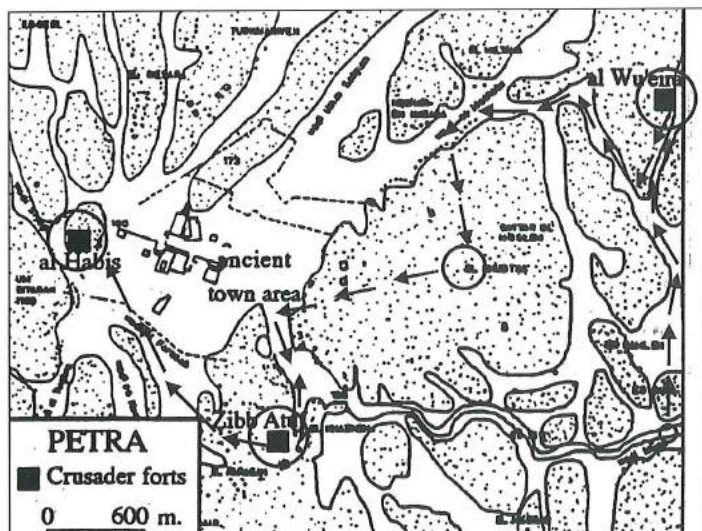
³ Cf. some recent results obtained by the research of the University of Florence carried out by G. Vannini and C. Tonghini, Mediaeval Petra. The Stratigraphic Evidence from Recent Archaeological Excavations at al-Wu'ayra, in *SHAJ* VI, Amman 1997, pp. 371-384 and the main publications indicated.

archaeological, monumental and naturalistic area as a whole (FIG. 2).

The result could be a route — from Wādī Mūsā to Jabal 'Āṭūff, touching the castles of al-Wu'ayra, the main entrance of the valley of Petra, and the fort of al-Habis — connected to the nearby 'Royal Capital' of ash-Shawbak, allows us to become aware of characteristics and culture of the European settlements in ancient Petra (FIG. 3). A similar example of restoration and 'use' of the territory in an intact archaeological area, defined integrating the archaeological reconstruction of the sites and the territory, would form examples of operations recently carried out on Italian archaeological areas and up to today never experimented in the Near East.⁴



2. The access area to the al-Wu'ayra castle.



3. The archaeological route to medieval Petra.

⁴ As regards to the problem of the conservation of open archaeological sites there are recent publications, especially carried out by Italian archaeological schools, starting from the account given by the records of the meeting *I siti archeologici. Un problema di musealizzazione all'aperto*; Roma 1988; see also G. Vannini, *Ricerca scientifica e comunicazione sociale in archeologia: un rapporto da definire*, in AA.VV., *La società fiorentina nel basso medioevo*. Elio Conti, *Nuovi Studi Storici* n. 29, Roma, Istituto Storico Italiano per il Medio Evo 1995, pp. 255-282 and *Siti e monumenti della Giordania. Rapporto*

2. Forming an Archaeological Picture

Firstly, in synthesis, we must take into consideration some basic archaeological elements that have been identified during the various phases of the research work, that can be usefully included in the choice of the plan, both regarding the comprehension of the historical and archaeological significance, in accordance with the tradition of the region and the planning of the territorial and structural emergences present.

The research required a series of topographical reading and a wide archaeological reconnaissance, as well as an analysis of the territory and a horizontal stratigraphy of the area of Petra. On such basis, first of all, it appears that the dimension and territorial role of the settlements examined in the area of Petra turn out to be the center of the Transjordanian area, both politically (with the exception of a brief period in the second third of the 12th century) and strategically, right back from when it was founded by the king of the Latin reign of Jerusalem.⁵

Under this light the royal establishment of Crac de Montreal (ash-Shawbak) has a precise strategical-territorial significance as an integrating part of the external system of connection between the military base, acquired during the first decade in the valley of Petra, and the regional road system. A very important strategical system referable to the road leading from north to south (the biblical 'road of the Kings' between Syria and Egypt) near the main ramifications of the tracks leading towards the internal areas of the Arabian peninsula (FIG. 4).⁶

Secondly, closely connected with the above territorial organisation, the complex western fortified system stands



4. Ash-Shawbak castle on the "King's road" near Petra.

sullo stato di conservazione, ed. L. Marino (who took part in the mission of the University of Florence between 1987-1990), Firenze 1994.

⁵ Vannini and Vanni Desideri, *Archaeological research on medieval Petra*, *op. cit.*, pp. 511-514; Vannini and Tonghini, *Medieval Petra*, *op. cit.*, pp. 371-373, 383.

⁶ A useful summary explanation is collected by H. Kennedy, *Crusader castles*, Cambridge 1994; cf. also L. Marino, 1997.

out — later abandoned again by the Ayyubids, with no exception — in the entire region and in the Valley of Petra. This characteristic has emerged very clearly during the archaeological analysis of the landscape carried out in the area of Petra. The control of the valley and its access systems appears to be the main reason why the Crusaders settled in an area that had been abandoned for centuries. A picture of the settlement together with the project to clarify a historical event that can be clearly explained with the aid of an organized and suggestive itinerary, included in the touristic routes in programme (FIG. 5).

Some of the main fortifications in the area of the valley would then become more comprehensible; because of their topographical position (both in relation to the environmental and orographical character of the area and in relation to the other fortified sites), and concerning the choice of the organisation of the 'spaces' and the various architectural solutions chosen.

First of all, the castle of *Li Vaux Moises* (al-Wu'ayra), is the main point of support of the western establishment of Petra and of the fortified site that guaranteed full control of the main accesses to the valley (FIG. 6).

Externally to this, deep stratigraphical analysis has indicated the fundamental historical function of each presence interested in the control.

At present, the stratigraphy of the site indicates the presence of settlements of three different periods, two of which have impressive monumental characteristics that make al-Wu'ayra a potential, almost unknown archaeological area of great interest: the facies late Neolithic and the medieval. The former, characterized by a monumental necropolis of tombs dug in the rock, pathways and sacred areas (FIG. 7);⁷ the latter formed by a

vast and complex defensive network, dating back to the Crusader-Ayyubid period around a central castle, that make part of a complex system of protection and control of the Valley of Petra, including other internal and external fortified areas (i.e. al-Ḥabis and Shawbak). For a century this system placed Petra, politically, in the center of the entire historical Transjordan (Fig. 8).

The castle of al-Ḥabis, that dominates the internal part of the valley and at the same time closes the entrances (FIG. 9), like the castles of al-Wu'ayra and probably Jabal 'Āṭūff (FIG. 10), has different characteristics even if in some ways complementary; after Philip Hammond's pioneering but very useful research carried out about thirty years ago,⁸ a thorough archaeological survey of the surface has been carried out (and stratigraphical tests are planned for our following mission).

This fortified site appears more complex than we had assumed, with a strictly military arrangement and fitting and practically no residential functions (FIG. 11).⁹ It occupies the peak of an entire rock formation and dominates, with a number of natural rock buttresses and rock terraces all around the peak, up to the extreme northern point of the valley below, the only position that can fully control Wādī al-Maṭāḥa entrance to Petra, externally closed in by al-Wu'ayra (FIG. 12).¹⁰

For the latter castle, we have precise information concerning the location and the function of the entire structure, as well as for each single architectural solution taken by the constructors and modified during the century of the Crusader occupation (and partly Ayyubid) (FIG. 13). We are still acquiring data for al-Ḥabis, and as yet we are not in possession of the vertical stratigraphy (both external and internal, in height and underground) that could suggest the type of conservation intervention necessary to emphasize this characteristic site.

3. The Production of a Project and the Proposal of a Plan

Fundamentally, the project suggested can be carried out in three different steps:

- a) The production of specific maps: with different scales according to the theme: Transjordan ('Ammān - al-'Aqaba) / the system of Petra (ash-Shawbak - Petra) / the Valley of Petra (al-Wu'ayra - al-Ḥabis - Jabal 'Āṭūff).

The above cartography will be based on the existing maps¹¹ integrated both on the basis of aerial photographs and the data obtained from the research. These maps will be computerized and will be constantly brought up to



5. The Valley of Petra and the Crusader fortified system of al-Ḥabis.

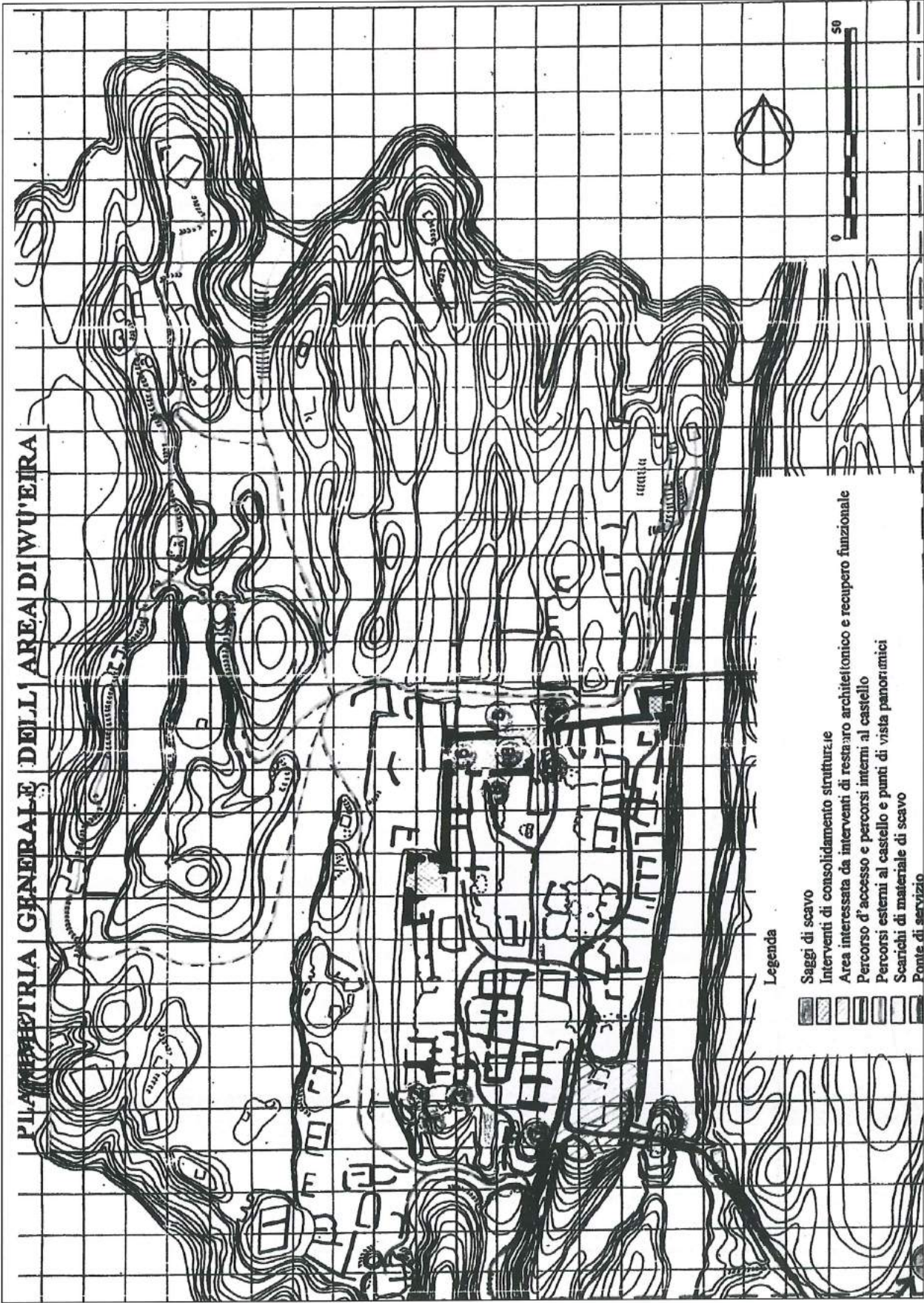
⁷ M. Frau, *Al Wu'eira. Ipogeismo e megalitismo funerario*, *Sardegna Antiqua*, 3/1, 1993, pp. 9-13; M. Frau, in the press

⁸ P. Hammond, *The Crusader Fort on El-Habis at Petra. Its survey and Interpretation*, University of Utah 1970.

⁹ Vannini and Vanni Desideri, *Archaeological Research on Medieval Petra*, *op. cit.*, pp. 512-513, n. 12.

¹⁰ Intensive reconnaissance have been carried out starting in 1998 in the area of the castle directed by Cristina Tonghini (with the cooperation of Michele Nucciotti and Antonella Sogus).

¹¹ M. Bini and S. Bertocci, *The Survey of al-Wu'ayra: A Contribution to the Knowledge of the Crusader Castles in Jordan*, *ADAJ* 41, 1997, pp. 403-414.



6. Historical routes identified inside the fortified area of al-Wu'ayra.



7. The prehistorical necropolis of al-Wu'ayra: an hypogeum tomb in the rock.



9. Al-Ḥabis castle: part of the external defensive system.



8. Al-Wu'ayra: excavation of the postern in the northern wall of the keep.



10. The 'towers' of Jabal 'Āṭūf.



11. Al-Ḥabis: the monumental cistern.

date.

b) Preparation of the internal routes of the Petra Crusader-Ayyubid complex.

The qualification of the environment will be carried



12. Al-Ḥabīs: the control of the access wadi to the Valley of Petra.



13. An example of reusage in al-Wu'ayra: the moat of the Crusader keep and the plant of an Ayyubid metallurgical system.

out with the estimated access system of the valley: an original and fascinating system of routes (where people can walk or ride), that can also become a great tourist attraction, situated between the hotel area and the larger

area that would be suitable for the 'entrance' to Petra, Wādī al-Maṭāḥa passing through the fortifications of al-Wu'ayra and continuing through the valley, up to the summit of the castle of al-Ḥabīs, from where one can enjoy the most unique and majestic views of the archaeological-monumental area of Petra (FIG. 14). The route would end with the climb of Jabal 'Āṭūff, where well conserved defensive structures, which have been used again during the Crusader era to close the accesses and control the valley, are present (FIG. 15).

Therefore the idea of erecting a light structure for various functions such as a museum and facilities, in the large natural panoramic square near the path that leads to the entrance to the castle of al-Wu'ayra (FIG. 16).

Here an automatic computerized system can be installed, with information that regards both the data obtained by the research, the maps of the settlements as well as a computerized architectural and topographical reconstruction of the rooms, based on the results of the research.

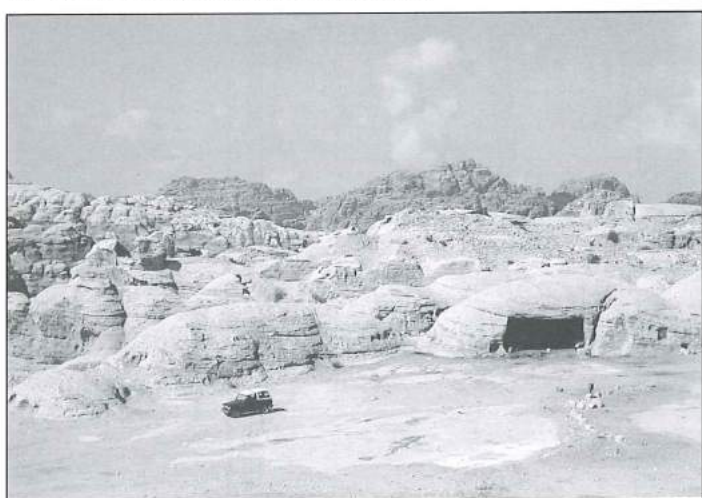
The first stage of the program of information of the data already achieved, has allowed the unification of the



14. View of the archaeological area of Petra from al-Ḥabīs.



15. The archaeological area of Jabal 'Āṭūff.



16. The area for facilities in front of the entrance to al-Wu'ayra.

basic documentary material, creating an automatic system of HTML pages, consultable with a browser and able to supply a graphic description for each different relation between the various elements —mobile and structural— recorded. The second stage, now being carried out, aims at the creation of a specialized Java HTTP miniserver that can be used on a PC both on local network and Internet in order to swiftly obtain the HTML pages, with the addition of the 'query' function. This will have various functions that can be programmed for different uses

(therefore not only specialistic but also for touristic use).

c) Structural operations: The restoration, reinforcement and exploitation of the fortified sites of the valley can be carried out using the same techniques as the ones employed for the al-Wu'ayra castle. These operations will be mainly conservative, only a few limited structural and architectural operations will be carried out. At the same time, the construction of a few light protective structures and the opening of internal routes connected to the historical roads of the valley will be taken into consideration.

Among the various solutions indicated in the project for the al-Wu'ayra castle, and that could prove a useful indication to be followed again, just as an explanatory example, we relate to the one for the fortified church. This building and topographic area are a critical point of the castle and have therefore been carefully examined. The operations in program are based directly on the documentary information obtained (FIG. 17).

To recapitulate, there are various elements that characterize the church as surveyed from the excavations: the foundations and location plan, locating the area of the apse, the level of the stone floor, the main arch portal on the southern side and the western entrance (FIG. 18); finishing elements such as architectural furnishings or plastering; structural and functional connection such as the monumental cistern beneath the apse or the burial ground area — which also has some monumental characteristics — connected with the access ramp to the main portal (FIG. 19); topographic relation with the defensive system and the organisation of the internal spaces, like its position overhanging the western fortress and resting on the northern wall of the castle and the location of the two small doors connecting the northern and western external defensive areas of the castle.

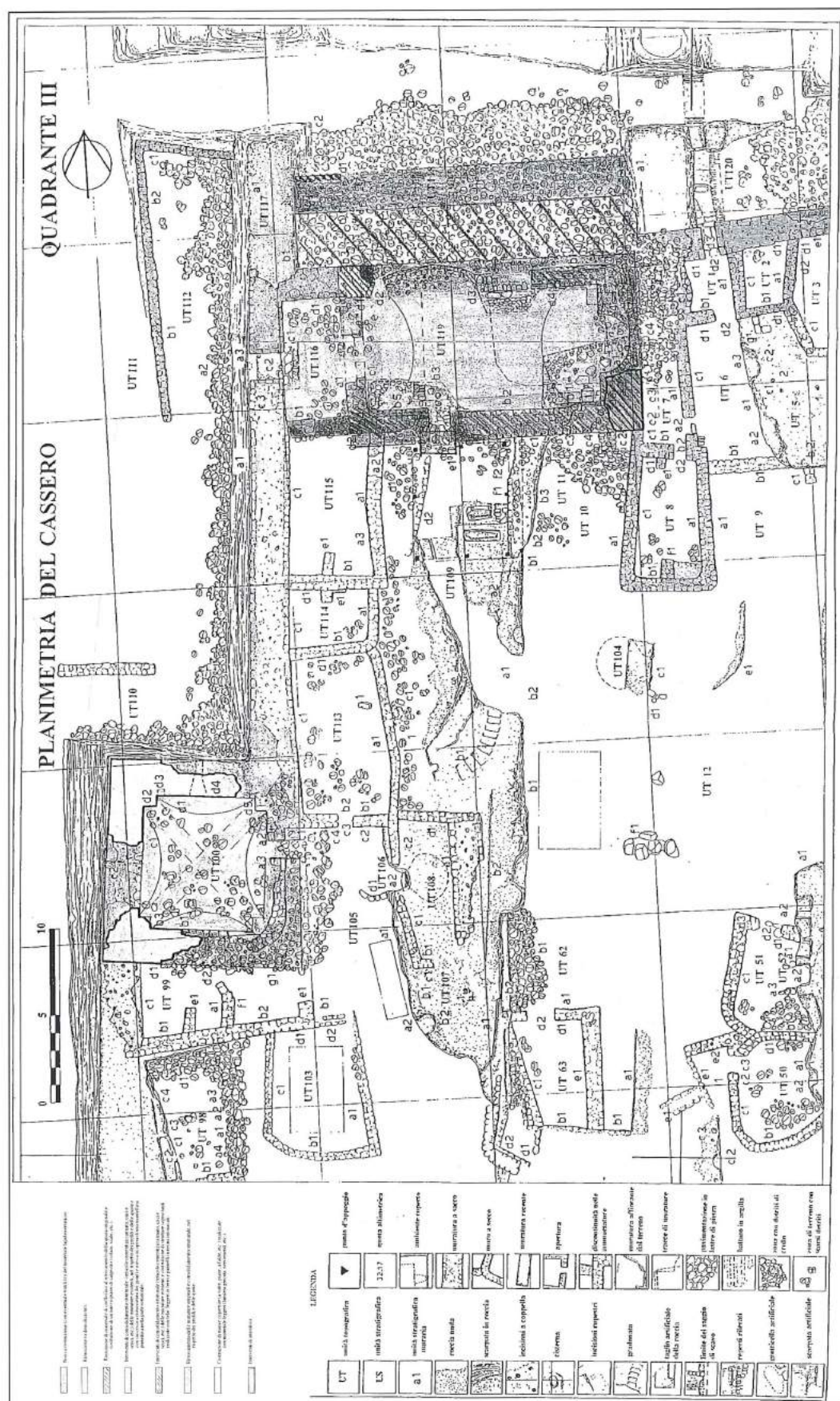
This building provides sufficient elements to contemplate its utilization for facilities (i.e. an exhibition area) and therefore in addition to the general conservation operations, it will need a partial architectural operation and here we have sufficient documentary elements to compare with similar churches such as ash-Shawbak (FIG. 20).

On a strictly operative basis, many technical operations that have been chosen for the project for the al-Wu'ayra site, can be taken as examples for the general restoration program.

¹² M. Crescioli, F. Niccolucci, C. Tonghini and G. Vannini, PETRA: un sistema integrato per la gestione dei dati archeologici, in I° Workshop Nazionale di Archeologia Computazionale, Napoli-Firenze, 1999, *Archeologia e Calcolatori*, 10, 1999.

¹³ A first proposal of a project for the restoration of the al-Wu'ayra castle has been carried by P. Ruschi. This project, directly connected with the archaeological research of the mission under the direction of G. Vannini, is based on the survey carried out by M. Bini, and aims at the conservation of the existing fortifications, limiting the structural operations to the reinforcement of the existing

parts and without having to recourse to anastilosys (that will probably concern only the side-portal of the church). This does not exclude the fact that the project aims at giving back the image of the Crusader architecture and after the restoration of the existing parts, carried out with advanced technologies, will become clear with the aid of a series of guided routes and architectural 'indications' carried out with modern techniques, some of which have a functional and protective purpose (as in the case of the new covering of the church).



17. The planimetry of the archaeological area of the al-Wu'ayra church: plans for a restoration.



18. Al-Wu'ayra church: archaeological elements of the entrance portal.



20. The church of ash-Shawbak.



19. Al-Wu'ayra church: the walls of the apse and the entrance to the monumental cistern.

4. General Program of the Operation: Operative Phases

An operative program could be carried out as follows:

A) Analysis and critical evaluation of the building techniques and of the state of conservation of the struc-

tures and the sites.

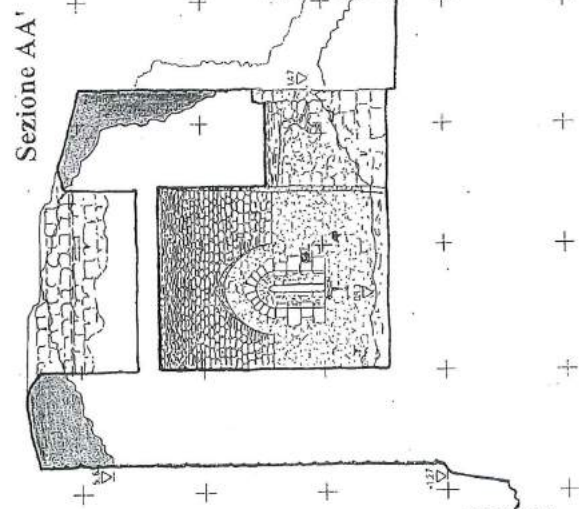
B) Defining the methodology of the operation of restoration (the problems, development of the archaeological research, conservative aims and operative levels), at present possible for al-Wu'ayra:

1. urgent operations on elevated structures (in al-Wu'ayra: access door, northeastern angular tower, western tower, the church apse and the cistern below);
2. restoration and strengthening of the structures (FIG. 21);
3. integrating in the traditional way missing parts of the walls;
4. getting rid of the waste and collapsed stone in a selected way and in accordance with the proceeding of the archaeological research.

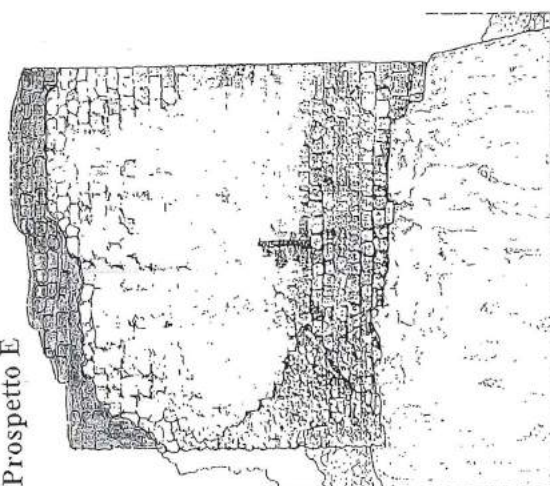
C) For al-Wu'ayra: restoration and architectural and functional recovery of the fortified access to the castle and exploitation of its formal and environmental characteristics. In particular, we suggest the proposal of some architectural elements (entrance portal, part of the ex-

PROGETTO DI RESTAURO INTERVENTO TORRE NORD STATO SOVRAPPOSTO

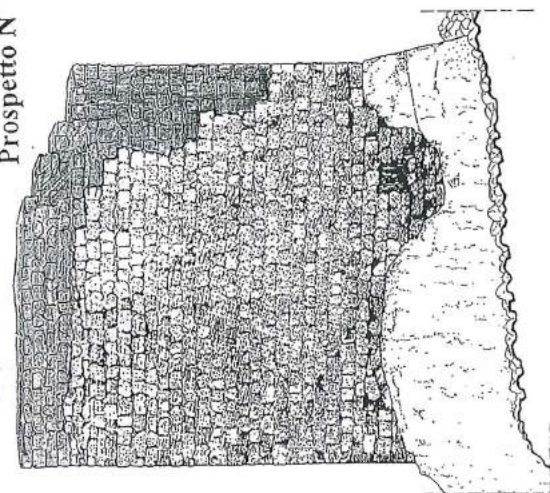
CASTELLO DI WU'EIRA TORRE NORD



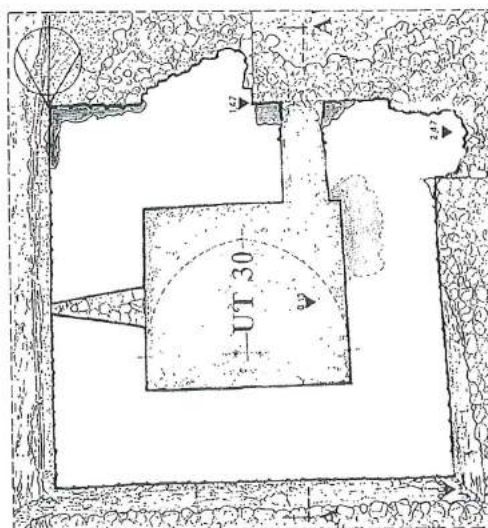
Prospetto E



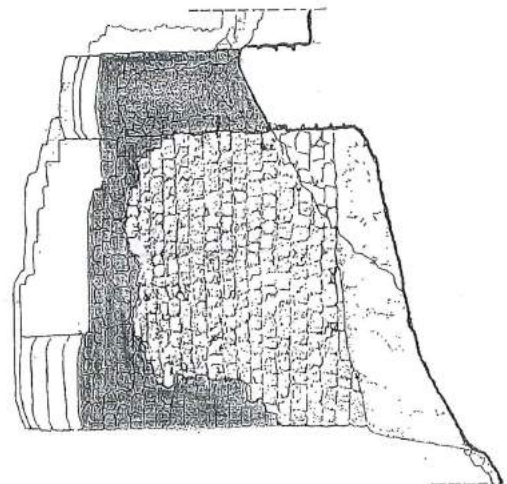
Prospetto N



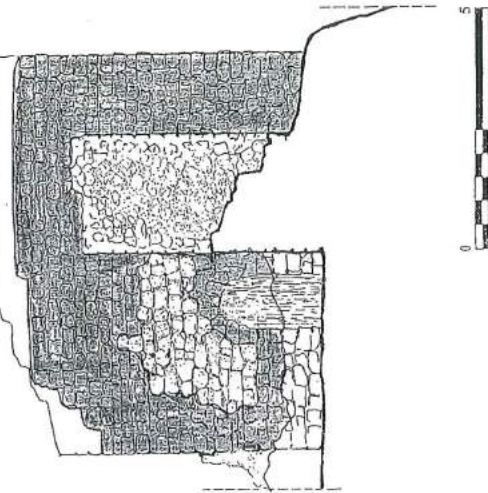
Pianta



Prospetto W



Prospetto S



21. A plan for the restoration of the northeastern angular tower of the keep of al-Wu'ayra.

ternal walls, the walls on each side of the internal ramp, the control tower in the access area, elevated passage) able to demonstrate the articulate and complex defensive system.

- D) Making adequately equipped access and visiting routes integrated with the historical routes.
- E) Building a light polyfunctional structure that has a didactic aim, a display (a scale plastic model, illustrative panels, reading systems, and computerized reconstructions, audio visual, etc.) and services (a restroom, café, WC, a shop, etc.) to be positioned in the area in front of the castle near the road.
- F) Technical regulations for the maintenance of the entire castle based on local competence and resources.

One cannot but emphasize that one the aims of this research is to define, on the basis of an accurate scientific

and technical cognizance, a method that will lead the way to an 'operative' integration of the research with the final restoration.

A sperimental method,¹⁴ which basicly develops by singling out parameters common to both sections, such as the absolute respect for the documentary value of the constructions, the analysis and critical comparison of the various results, the severe application of the respective methods. The attempt is to carry out a coordinate operation, able to demonstrate the possibility of operating in the vast field of archaeology and restoration on the basis of complementary criteria, respecting the different scientific spheres, thanks to the defined operative systems, but avoiding separations and diversifications sometimes apparently insuperable, if considered strictly in a disciplinary area.

¹⁴ Remembering how the conservation of archaeological buildings towards the end of 18th century set the roots for modern restoration, and how, up to over the second half of the 20th century, has been the center of a critical and methodological debate of the entire subject of study, one cannot but point out how, in recent years, we are witnessing profound changes (for an accurate and up to date general picture on this subject cf. G. Carbonara, *Teoria e metodi del restauro* and M. P. Sette, *La continuità passato-presente e le operazioni sulle preesistenze*, in G. Carbonara (ed.), *Trattato di restauro architettonico*, vol. I, Torino 1996, pp. 3-302). Under the

impulse of archaeological schools, disciplinary interventions and various solicitations, we can notice, worldwide and particularly in the Middle Eastern area, restorative interventions far from, if not in contrast with, the basic principles for restoration recognized all over the world.

The main risk is that of taking a step backward. The experimental aspect of this project is entering into the subject, in a complex, like the medieval ruins of the Crusader castle of al-Wu'ayra, without renouncing the possibilities that modern technologies offer, both in a architectural and informatic fields.