

## The Umayyad Palace of 'Ammān: Stratigraphy and Restoration\*

### The Use of the Stratigraphic Method of Analysis in the Integrated Process of Research, Excavation, Restoration and Presentation

The use of the stratigraphic method of analysis not only to the buried deposits but also to the whole architectural remains of the Umayyad Palace of 'Ammān and its surroundings has been the key of our work during the present campaign of excavation and restoration. The use of this method, has led us to a new and complete research with outstanding results.

On the one hand, regarding the architectural level, different aspects and elements of the buildings have been clarified, overcoming some discussions based up to now on philological points of view, typical of the history of art approaches. With this research we have now the material evidences to support doubtlessly several solutions adopted in the restoration, as well as new paths have been opened to study and understand the Umayyad architecture.

On the other hand, the use of this same method at urban level, has allowed us to discover the center of the Umayyad city that once existed on the 'Ammān Citadel, and to planify its excavation. The urbanistic values and significance of this city are analyzed in another paper in this volume (Almagro and Arce, "The Umayyad Town Planning of Citadel of 'Ammān").

Our aim is to present some of the results of this methodological approach, whose validity has been proved by the above mentioned discoveries themselves, as well as the related interventions carried out in order to consolidate and restore them.

The intervention on such a big site, with so many different situations has led us to different levels of intervention: from the mere consolidation of the archaeolog-

ical remains, to the anastylosis of the monumental vestibule. In this case the remaining original pieces have been put back in place. Where necessary, new pieces reproducing the volume of the missing ones have been added. No attempt has been done to imitate the decoration. On the contrary, the aim has been to treat the architectural lacunae so that the structural stability and visual unity of the monument will be recovered, being easily recognizable by the new elements. Regarding this, it is also important to mention that all the original elements and surfaces have been carefully preserved. Wherever it was not possible to carry out the material anastylosis, the "virtual" one will guarantee the thorough understanding of the structure by the visitor (Almagro, Arce and Fernández 1997).

The significance of the whole intervention (research, excavation, restoration and presentation to the visitor) especially due to the close relationship and articulation between the different stages, could be seen nowadays on the 'Ammān Citadel, where a complete palatine Umayyad city is emerging from the mist of the past.

Now we will examine some samples of our intervention that, because of their significance, deserve a more detailed attention.

### *The Entrance to the Vestibule*

It was already known that the Umayyad building was built over the remains of a previous Byzantine one (Almagro 1983; 1994). The first courses had been used as a foundation for the new one, giving as a result almost the same plan. Little changes took place, for instance, the south door was narrowed and the foundations of the new jambs were built over the Byzantine steps (Almagro 1983: Lams 17.c, 17.d). It was thought that these same

\* The process and final results of this research will be the core of the Ph.D. thesis entitled "The Archaeology of Architecture and the Restoration Project" that will be presented by arch. Ignacio Arce in the Madrid School of Architecture (Madrid Polytechnic University). The Thesis is co-directed by Prof. Antonio Almagro (EEA-CSIC), and Prof. Roberto Parenti (Univ. di Siena).

For more details and especially about the methodological approach, see I. Arce, *Conocimiento y finalidad: Del fragmento a la unidad (Planificar la excavación, proyectar la restauración, intervenir en la obra)*, in *Progettare il Restauro*, proceedings of *Scienza e Beni Culturali XIV Bressanone 1998*. Edizione Arcadia Ricerche. Venezia 1998.

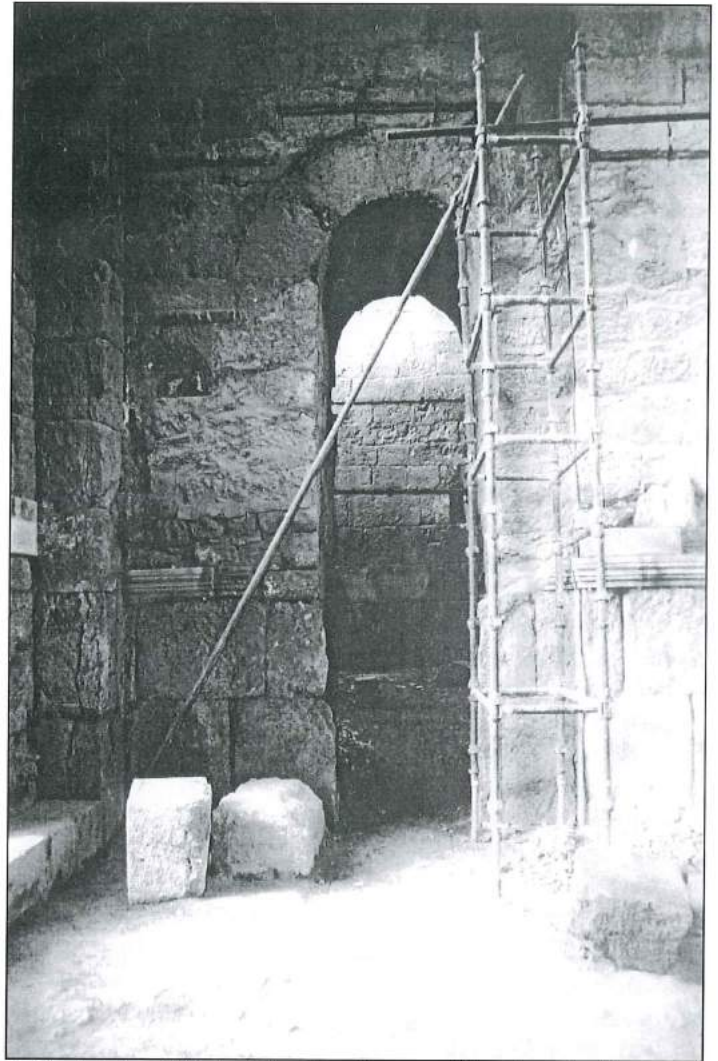
steps had been kept in use during the Umayyad period, or that the Umayyad steps were placed in the same place, over the Byzantine ones (Northedge 1992: Figs. 38, 40; Almagro 1983: Figs. 8, 11, 13). But when studied in detail these hypotheses, there were some doubts that have led to reconsider them and to propose a new solution:

- If the Byzantine steps would have been kept in use, the rubble core of the foundation of the jambs of the new southern door would have been seen, something that does not make sense. If they had been placed over them (in order to hide that rubble stone foundation), the lower steps would have interrupted the access to the lateral rooms. Furthermore, the upper steps would have had, in both cases, an odd ending against the inner side of the south wall.
- The different degrees of erosion of the jambs of the lateral doors, below and over the level corresponding to the jamb of the entrance to the building, indicates that for a long period of time, the first course (below the mentioned level and belonging to the Byzantine building) had been protected against erosion (because it was buried, for instance).
- The proportions of the doors leading to the lateral rooms, resulting from the initial hypothesis, were really odd: very narrow and high (FIGS. 1, 2a). It must be taken into account, that all the doors in the building have a proportion 1:2, being surmounted by a lintel and a relieving arch. Furthermore, in this case the existence in the past of wooden doors makes necessary a lintel. The existence of these doors, is deduced from the protrusions (the frame) in the stone jambs for fixing them (not being present in the intrados of the relieving arches).

All these questions led to the conclusion that in the south arm of this cross plan building, there was a sort of platform at the same height of the entrance. The difference of level with the rest of the building was solved by means of a flight of steps placed under the arch that opens to the central space. This allows the lateral doors to recover their logical proportions (1:2) placing the required lintel at the height of the frieze of niches that run all along the interior of the building. Consequently the lateral rooms had this same level. It gives also a more logical and comfortable access to the building (see FIG. 2a, b).

#### *The South Façade of the Building*

Related to the above mentioned analysis of the proportions of the doors of the building, it has been also corrected the first proposal for the main door of the south façade (with a 2:3 proportion, and an arrangement similar to the one at Qaṣr al-Ḥayr ash-Sharqī, see Almagro 1983: Figs. 9, 10, 12, 13). The above mentioned 1:2 proportions with a lintel and a relieving arch have been taken into account in the restoration (FIG. 3). New wooden doors lined with iron have been placed, in order to reuse the building.

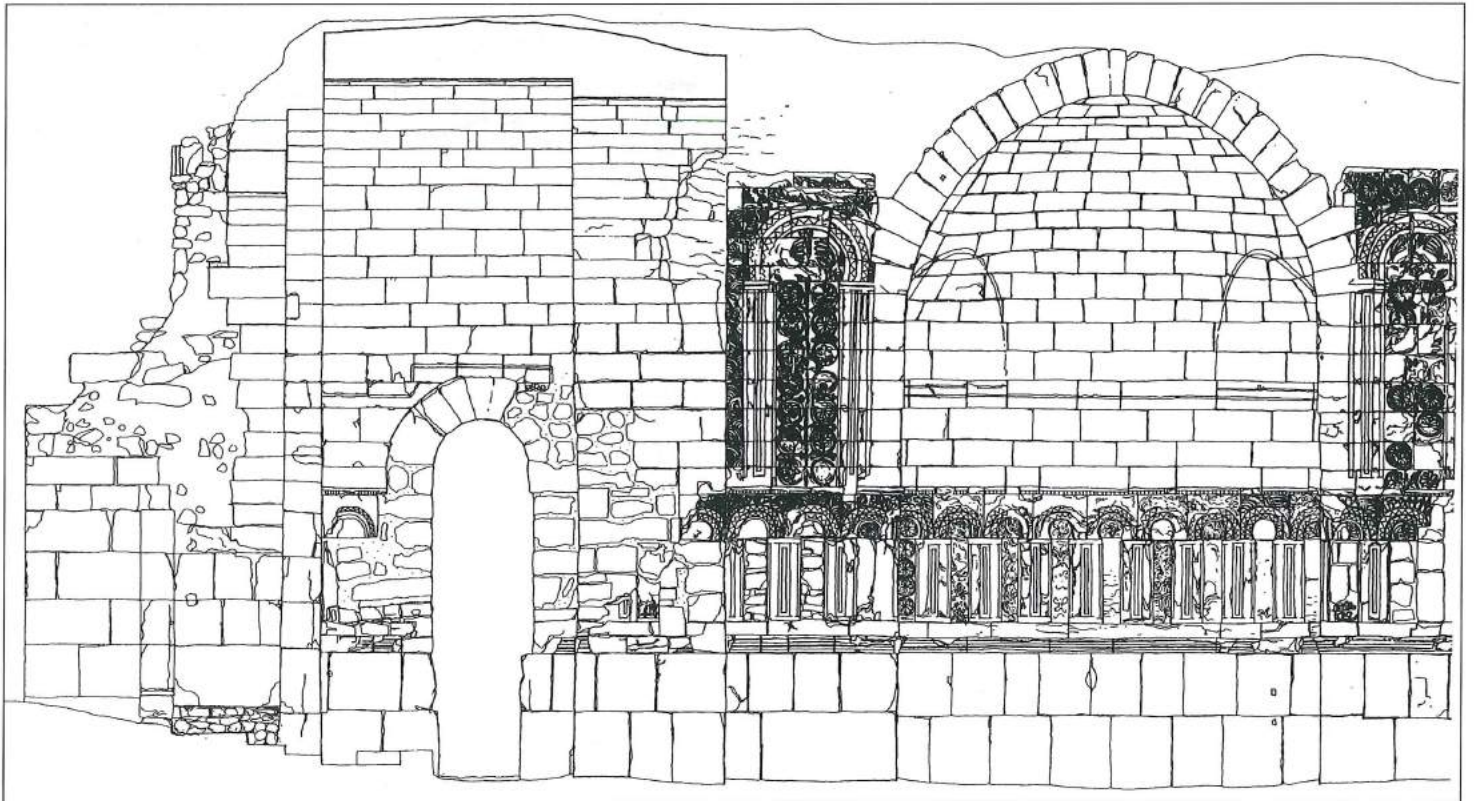


1. The interior of the building showing one of the doors leading to the side room.

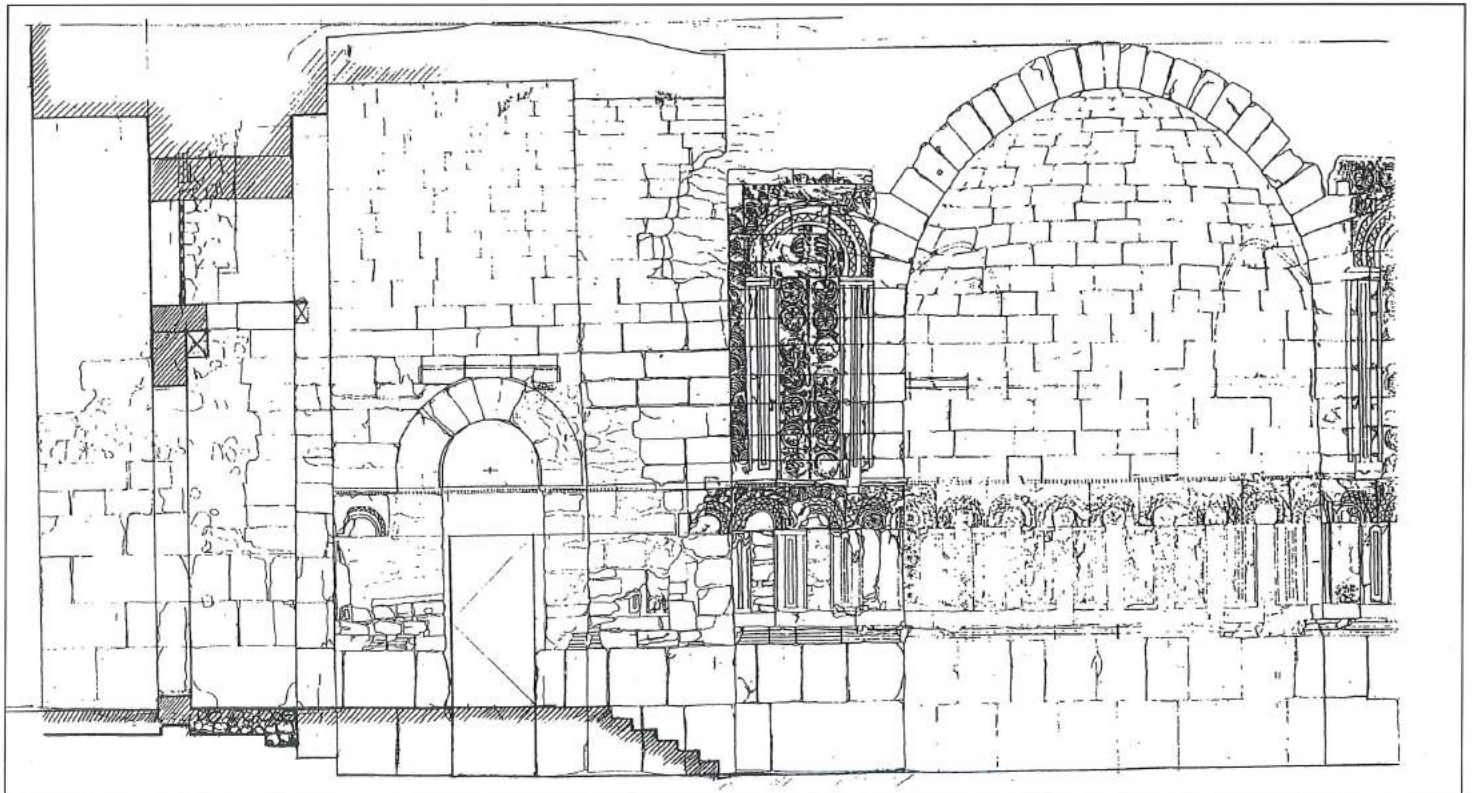
Regarding the main features of the composition of the southern façade, two main proposals had been presented (Almagro 1983: Figs. 9, 10; Northedge 1992: Fig. 41). In none of them was taken into account the problem of lighting the rooms behind the façade. Northedge proposes a solution with a frieze of small blind niches, following a philological approach, taking as a reference Sassanian models, but without taking into account the mentioned problem of the illumination of the internal rooms.

It seems logical that those rooms, due to their position and orientation, were illuminated through the southern façade. The question is how the windows were placed and what was their shape.

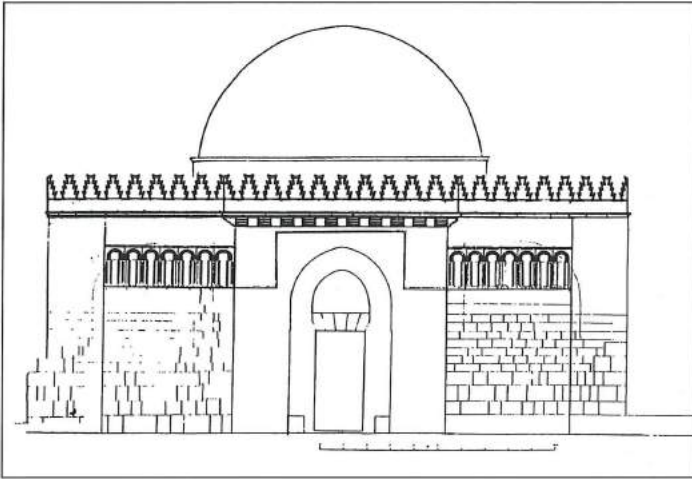
The south façade is articulated by means of buttresses and recessed stretches of wall in between. Although the alignment of the buttresses apparently matches the rooms behind, there is actually a shifting. As a result of this, if a window is placed along the axis of the room, it will not be in the middle between the buttresses, and viceversa. Be-



2a. A section showing the interior of the building.



2b. A reconstruction of how the interior might have looked like with the proportions of the door.



3. Reconstruction of the original façade.

sides this, there is the issue of the shape of the window. The thorough study of the openings in the vestibule directed our attention to the window that connects the staircase with the west arm. This connection is achieved by piercing one of the niches of the decorative frieze of blind niches that runs alongside the central cruciform space. This allows to have the opening placed along the axes of the staircase, meanwhile, inside the central space, due to this crafty solution, the compositive rythm of the frieze is not disturbed (it is not even noticeable that one of the niches is opened). This would be the only solution to the problem of the south façade: a frieze of blind niches between the buttresses, being one or two of them pierced, corresponding to the axis of the inner rooms. Furthermore, there is the fact of the existence of some blind niches that do not belong to the inner areas of the building, and among them, one fragment corresponding to a pierced niche. Similar solutions of pierced niches placed at the top axes of a pointed-arch-section vaulted room could be seen at al-Ukhaidir (Creswell 1940: Figs. 48, 49).

*The Problem of Roofing of the Central Space and the Evidences for the Existence of a Dome*

This has been one of the most relevant discoveries, as it solves finally the controversy about the roofing of the central space of the vestibule. For a long time there have been two different positions about this issue based on philological approaches, due to the fact that there was no definitive material evidence. The stratigraphic analysis of the material remains allow us to affirm doubtlessly the existence of a dome over this central space, overcoming the mentioned discussion. When the cleaning of the roof started, a stratigraphic analysis was conducted on the walls that were on top of the building.

The most relevant fact was the discovery of some recesses carved on the top side surface of these walls, that nobody had noticed before: on the one hand there were,



4. View from the top with evidence for sills of two windows.

in the outer wall of the east side of the building, traces of a carved channel correspondening to the drainpipe, placed in the east façade (still *in situ* also). On the other hand, there were, in the inner part of the south side (in the other sides the inner wall had disappeared), the sills of two windows connecting the central space with the exterior (FIG. 4). The top side of these stones correspond to the upper level of the internal cornice, this explains why it was not seen in the old pictures from the interior. Nevertheless, these sills could be appreciated easily from the top of the building (as well as in aerial pictures), but the slight change of level (not more that 2 cm) did not allow them to be noticed before. These windows would be open through the drum belonging to the dome structure and would illuminate the internal space. The solution would be similar to that already proposed in the past (Almagro 1983) on the base of the two semi-domes existing in the lateral arms of the same building: a stone dome placed over a drum where the corner squinches are carved, offering the transition from the square plan to the circular one, with two windows (instead of three) in each side to illuminate the interior.

The need to protect the carved decoration on the one hand, and to give a new use to the building that will guarantee its maintenance, on the other one, led us to propose to cover the central space. The evidence of the existence in the past of a dome led to put forward the project of a laminated wooden dome that is not intended to be a replica of the one that existed in the past. On the contrary, the material, the building technique, and the way it has been placed over the building, makes it easily recognizeable as a new structure and guarantees its absolute reversibility (FIGS. 5-7).

*The Application of the Analysis to Urban Scale:*

*The Discovery of the Sūq, the Square and the Mosque*

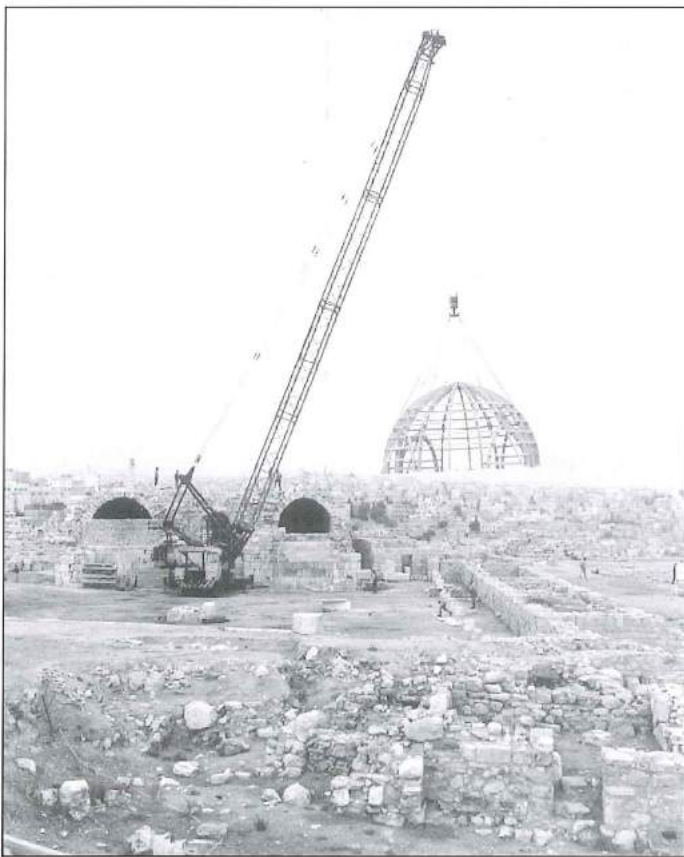
This case study shows how the correct stratigraphic interpretation of structures partially excavated a long time



5. The building structure before the dome was built (photo by I. Arce).



6. The building with the dome structure (photo by I. Arce).



7. Building up the dome (photo by I. Arce).

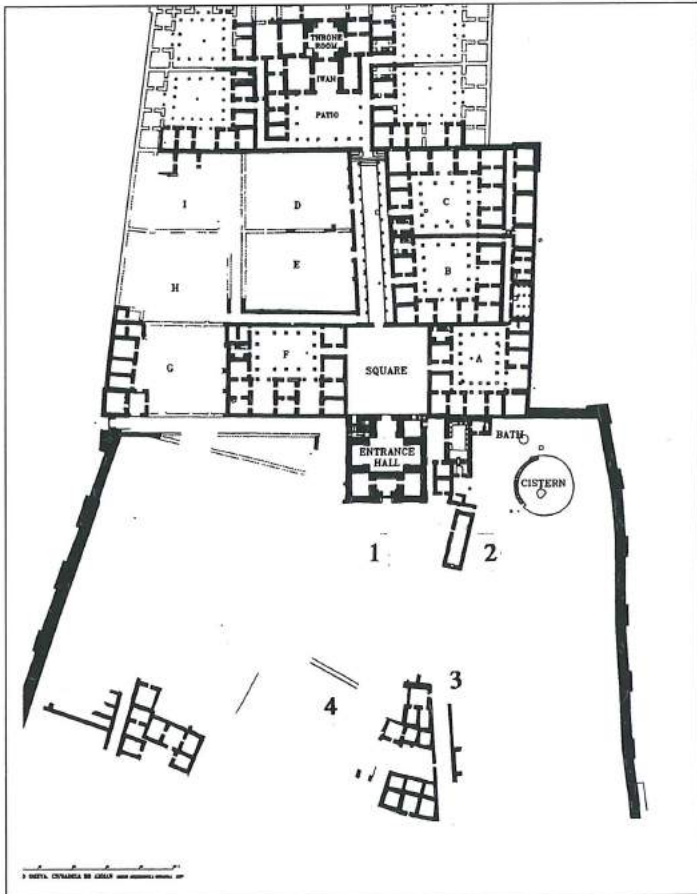
ago, led to a hypothesis and a strategy of excavation that gave as a result the discovery of the nucleus of the Umayyad *madīna*: the *sūq* square and the mosque. The evidences present were (FIGS. 8a and b):

1. The existence of an open area in front of the vestibule of which the shape and use were unknown.
2. The existence of a structure (a Fatimid mosque, built reusing a previous structure) connected in an awkward way to the bath area.

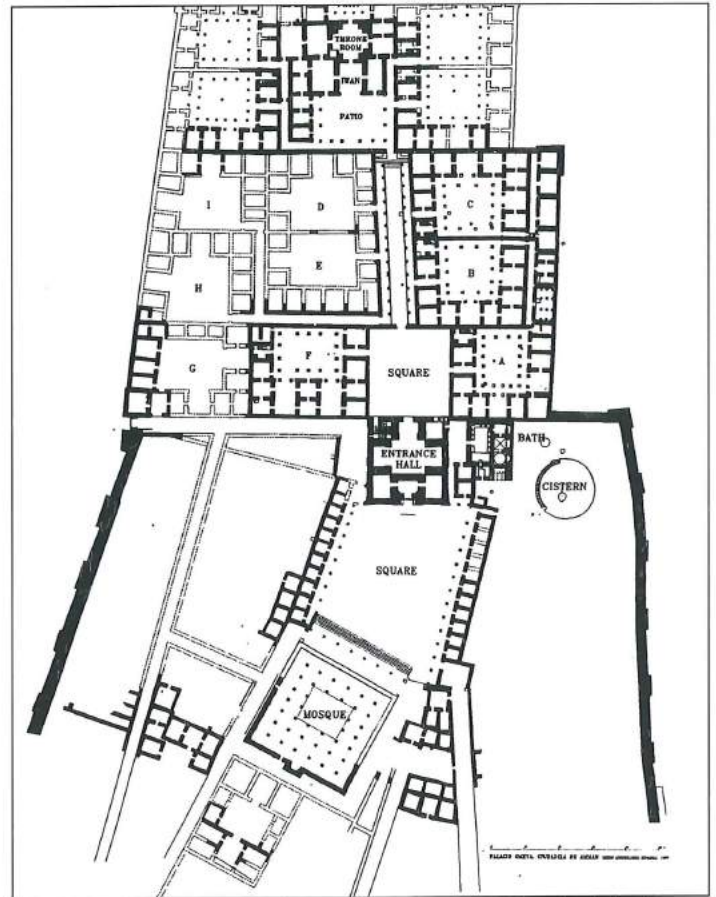
3. The structures excavated by the British Mission (BIAAH), especially the ones inside trench B-62.
4. The traces of a thick wall oriented E-W far away (60 m) from the vestibule.

The analysis was supported, firstly, by the correct interpretation of the stratigraphic relationships between some significant elements in trench B-62: a semicolumn that was not placed against the wall but built linked to it, showing their contemporaneity (evenmore: in the wall, over the column, was noticeable a demolition interface). This led to raise an hypothesis that gives architectural and structural sense to another element that the British Mission did not interpretate properly: a block of masonry 1.8 m square that according to them “serves no purpose” (Northedge 1992: 146), placed behind the semi-column (FIG. 9). Our hypothesis considered that this point was the end of a portico, the semi-column the last element of it, and the square block of masonry a sort of buttress to support the thrust of the arches of the portico (Arce 1997). The apparent alignment of this porticoed structure with the structure transformed into a mosque in the Fatimid period, and the same building technique used, led us to suppose that both were part of the same structure. The confirmation of this hypothesis by the soundings carried out, led to redefine the excavation strategy, and to discover two rows of porticoed shops that configure the *sūq*, and limit eastwards and westwards a great square.

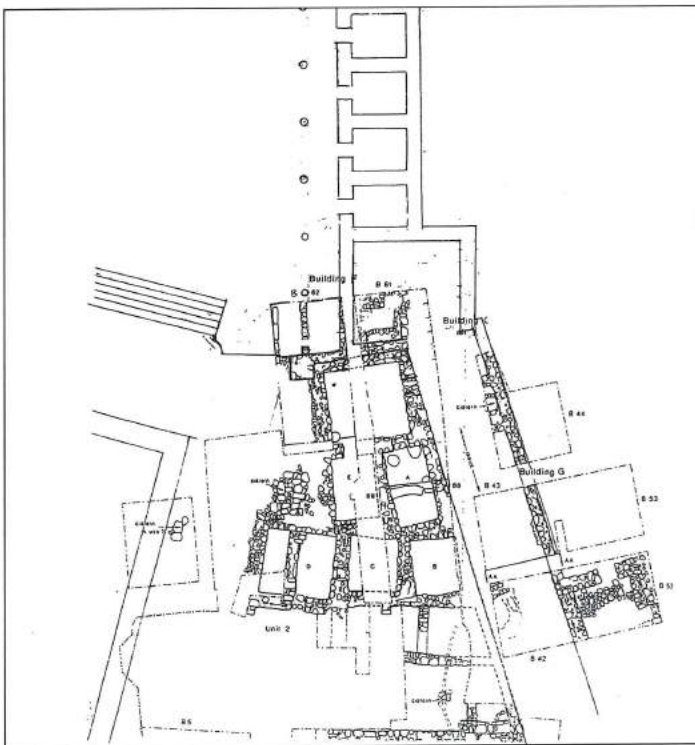
Finally the discovery of the flight of steps in the South side of the square, led to an ulterior hypothesis: that the structure placed over the steps (to which belongs the above mentioned thick wall), due to its outstanding position and orientation (towards Mekka) was the congregational mosque of this palatine *madīna* (Arce 1997). This hypothesis was also confirmed by the excavations carried out at the site. Giving as a result a unique urban fabric in the early Muslim period, that we have recovered from oblivion.



8a. Plan of the structures of the upper terrace of the citadel before the restoration work.



8b. Plan of the structures of the upper terrace of the citadel after re-search.



9. Plan taken from Northedge 1992, showing trenches excavated by the British Mission.

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