

## The Stone Building Tradition in the Ḥawrān with a Special View to the Development of the Plan of Buildings

### The Stone Building Tradition

Anonymous houses of great age has been remarkably well preserved in the Ḥawrān because of the exclusive use of the durable, local basalt stone for construction. The Roman era in particular has made a major impact on the architecture through the construction of a large number of truly remarkable monuments and urban structures, which still dominate the cultural landscape. Style and methods of construction were modified and changed during the succeeding Byzantine era, until the major sites gradually declined in the wake of the Muslim conquest. A recovery took place during the Mediaeval ages, when Great Mosques and strongholds were constructed in major sites as Izra', Buṣrā and Ṣalkhad.

Preserved buildings and archaeological investigations surely demonstrate the different architecture and construction methods, which characterise the imperial architecture of these historic polities. Whereas the classical Roman and Byzantine impact on the architecture often becomes immediately visible at the facades or from the architectural decoration, the plan and construction often remain concealed, requiring more detailed investigation and surveys. These structural and functional features may be rooted in a local and regional architecture that has continued to determine the local way of building quite independent of architectural styles and fashions of different historic periods.

Presenting examples of vernacular architecture, this paper demonstrates the *al-Bayt* as the basic housing unit in the vernacular architecture of the Ḥawrān. The plan and construction can be traced to an eastern influence of Parthian and Sasanian architecture, but only few monumental buildings are known from these early historic periods, not to speak of the vernacular housing, which have all disappeared due to the use of more fragile building materials. In the Ḥawrān, anonymous structures are preserved in a

fairly good condition up to the present day, providing a unique possibility to study examples of a regional architecture in continuous use up to Umayyad and well into the Abbasid period.<sup>1</sup>

Having survived during centuries, the preservation of these structures are now endangered during a period of rapid urban development and therefore need special attention and protection (FIGS. 1-2).

The geographical area is well defined within the southern part of Syria extending southwest to Umm al-Jimāl across the border to Jordan. The system of roads converging in Buṣrā, formulated in antiquity, remains till today one of the basic features of the region. The extant building structures, still standing two or three stories high, represent a unique possibility to study houses more than 1500 years of age. The most authentic setting of Ḥawrān architecture is perhaps best preserved at Umm-al-Jimāl. This site is truly one of the great archaeological monu-



1. Destroyed portal of gateway leading to the compound of the historic mansion at Inkhil, Syria (photo: F. Aalund, 1988).

<sup>1</sup> The paper is based on the material presented in: Flemming Aalund, *Vernacular Tradition and the Islamic Architecture of Boṣra*, Ph.D. dissertation, The Royal Academy of Fine Arts, School of Architecture, 1991 (distribution: BSA, Peder Skramsgade 2D, DK-1054

Copenhagen K). The study has been concluded as part of a cooperation project between the Buṣrā Directorate of Antiquities and the German Archaeological Institute in Damascus during the period 1981-1990 under direction by the late, Dr Michael Meinecke.



2. Destroyed stone houses and gateway to the historic mansion at Inkhil, Syria (photo: F. Aalund, 1988)

ments of Jordan in line with Petra and Jarash, although its immediate appearance of the solid, stone built houses is less spectacular.<sup>2</sup> Totally dominated by the basalt stone as the sole building material used for all purposes, the construction methods relate to the traditional building methods used all over the Ḥawrān (FIG. 3). The isolated location has the advantage that this site may attract visitors genuinely interested in history and archaeology and thus preserve the calm and unspoiled setting, which otherwise is so difficult to maintain with an increasing international tourism. This paper is not, however, dealing with preservation policies related to this important archaeological site, but presents examples of vernacular architecture elsewhere in the Ḥawrān, and discusses how the exclusive use of stone influence on the plan of the buildings.

### The Classical Architecture

The Roman era in particular has made a major impact on



3. Two storied main facade with corbelled staircase to second floor. Umm al-Jimāl, Jordan (Photo: F. Aalund 1985).

the architecture through the construction of a large number of truly remarkable monuments and urban structures, which still dominate the cultural landscape. Style and methods of construction were modified and changed during the succeeding Byzantine era, until the major sites gradually declined in the wake of the Muslim conquest. A recovery took place during the Mediaeval ages, when Great Mosques and strongholds were constructed in major sites as Izra', Buṣrā and Ṣalkhad.

The large Roman civic buildings were generally roofed by vaults constructed of light volcanic scoria firmly set in Roman cement as can be seen at the partly preserved vaults of the bath buildings at Buṣrā. Vaults and domes were likewise constructed by use of cut stones as demonstrated in the most elaborate fashion in the Roman theatre or the large Byzantine cathedrals of Buṣrā.

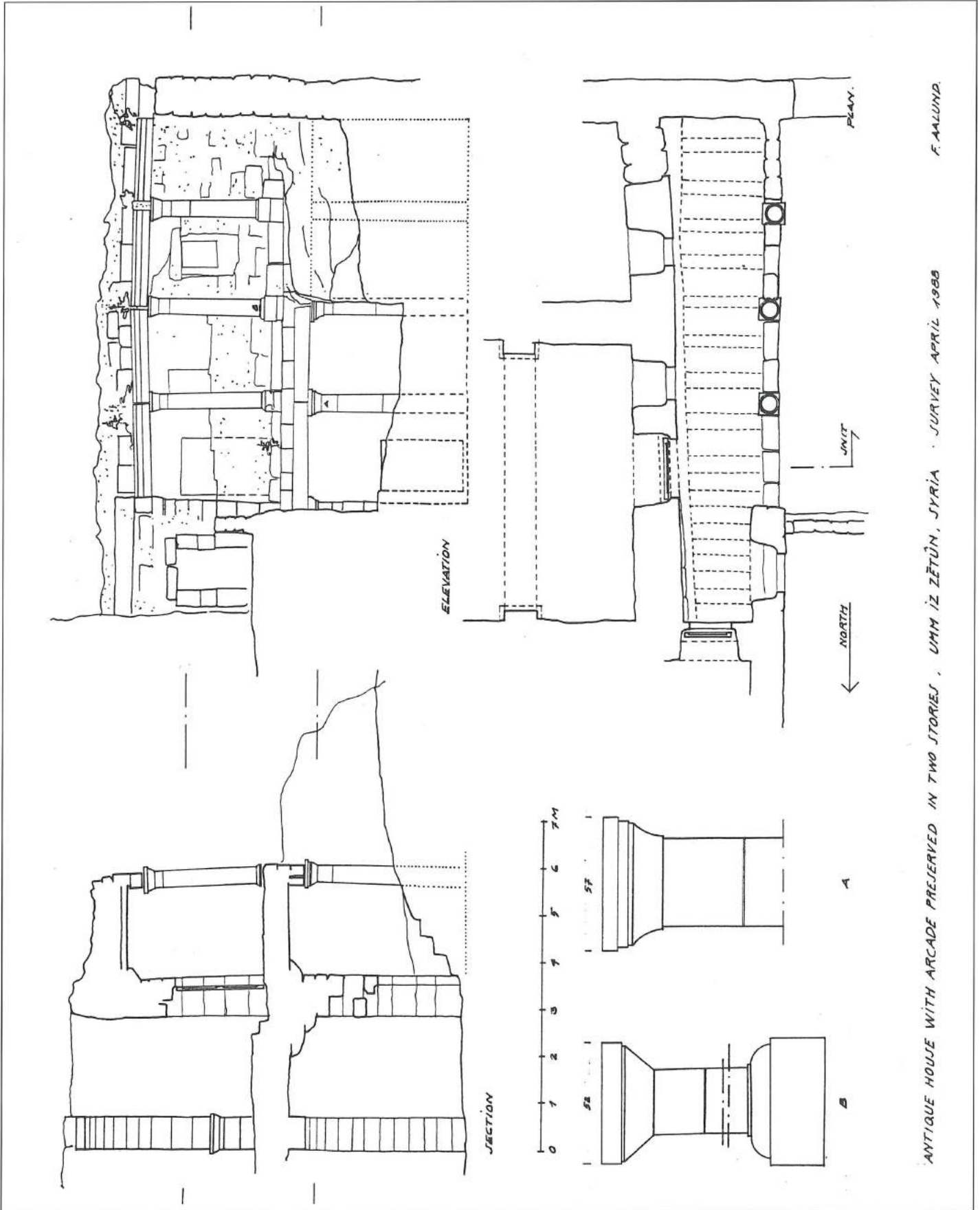
Whereas the classical impact on the architecture often becomes immediately visible at the facades or from the architectural decoration, the plan and construction of the vernacular buildings are rooted in a local and regional architecture, that continued to determine the local way of building quite independent of the imperial style and fashion of different historic periods (FIG. 4).

### The Stone Building Construction

The solid and heavy stone is forming a mass construction in which apertures and niches become the principal motive of the architectural vocabulary. Even doors and window shutters are made in solid stone on hinges (FIG. 5). The double walls reach an average thickness of 70-90 centimetres. Generally, the quality of the ashlar work is in keeping with the prominence of the building, varying from crudely hammered stone masonry with rubble backing used by the waller to neatly picked and finely smoothed ashlar surfaces with fine jointing used by the mason. Often doorways and window openings are accentuated by way of a specially refined surface treatment. Once quarried the stones have been used time and again for building purposes. Existing buildings have been pillaged and especially decorative and precious features have become the hallmark of other buildings, or the stones have been re-moulded to fill a new purpose making any dating of buildings a very tricky affair. Even for the construction of such a prestigious edifice as the Cathedral of Buṣrā, building stones with carvings dating from the second century AD have been re-used.

The restrictions imposed by the bearing capacity of the basalt stone has determined the roofing shape. Most common is the flat roof obtained by spanning stone planks between corbel supports on top of the walls or stone-built arches. Above the corbels, the walls were carried up to about one metre or less, to weight the corbels down and to

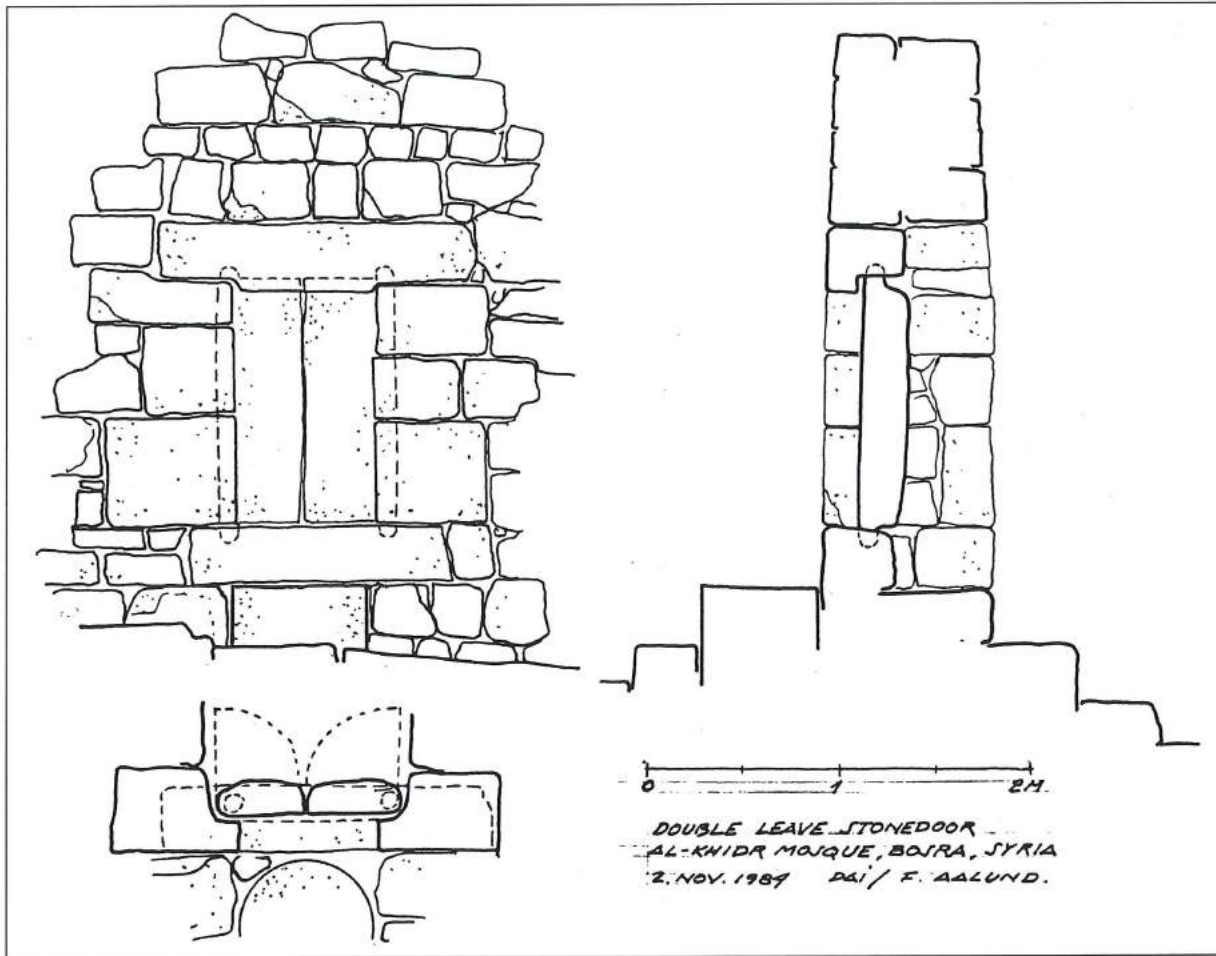
<sup>2</sup> See especially: B. De Vries, 'Research at Umm el-Jimal, Jordan, 1972-1977', *BA* 1979, pp. 49-55, and subsequent studies.



F. AALUND.

ANTIQUE HOUSE WITH ARCADE PRESERVED IN TWO STOREYS, UMM AZ-ZAYTŪN, SYRIA · SURVEY APRIL 1988

4. Preserved colonnade forming a porch in front of a local building, Umm az-Zaytūn, Syria (Survey by Eeva-Liisa Rautalathi and F. Aalund, 1988).



5. Entranceway with double-hinged stone door, al-Khidr Mosque, Buṣrā (Survey: F. Aalund, 1984).

hold them in place. Alternatively, double-ended corbel stones were frequently used for the slabs on either side of the partition wall to counterbalance each other. The girder arches are spaced at regular intervals of about 3m and hardly exceeding 4 m. Due to the maximum span of the basalt stone slabs, the load-bearing walls and arches are placed at regular intervals, creating an almost modular design. The width of the rooms is thus determined by the span of the arch, while the length depends on the number of girder arches used for the construction.

The building form has then been determined essentially by two factors: (i) Firstly by the use of basalt as the sole building material forming a truly lithic architecture and (ii) secondly, by the extensive use of the semi-circular girder arch as a means to span any larger space, implying that basalt planks can be used for roofing. But the outward thrust of the arches have to be counteracted in one way or the other, either minimizing the thrust by keeping the springing of the arch low (FIG. 6) or by providing various types of abutment to the external walls (FIG. 7). This structural implication has resulted in a widespread use of 'al-Bayt' as the universal plan form, made up of a central

hall with double floor-to-ceiling height and flanked to both sides by secondary rooms of lesser size in two stories, providing the required counterbalance<sup>3</sup>. In this way the use of buildings, material and construction methods constitute a unique vernacular architecture, which is based on a long tradition in the Middle East.

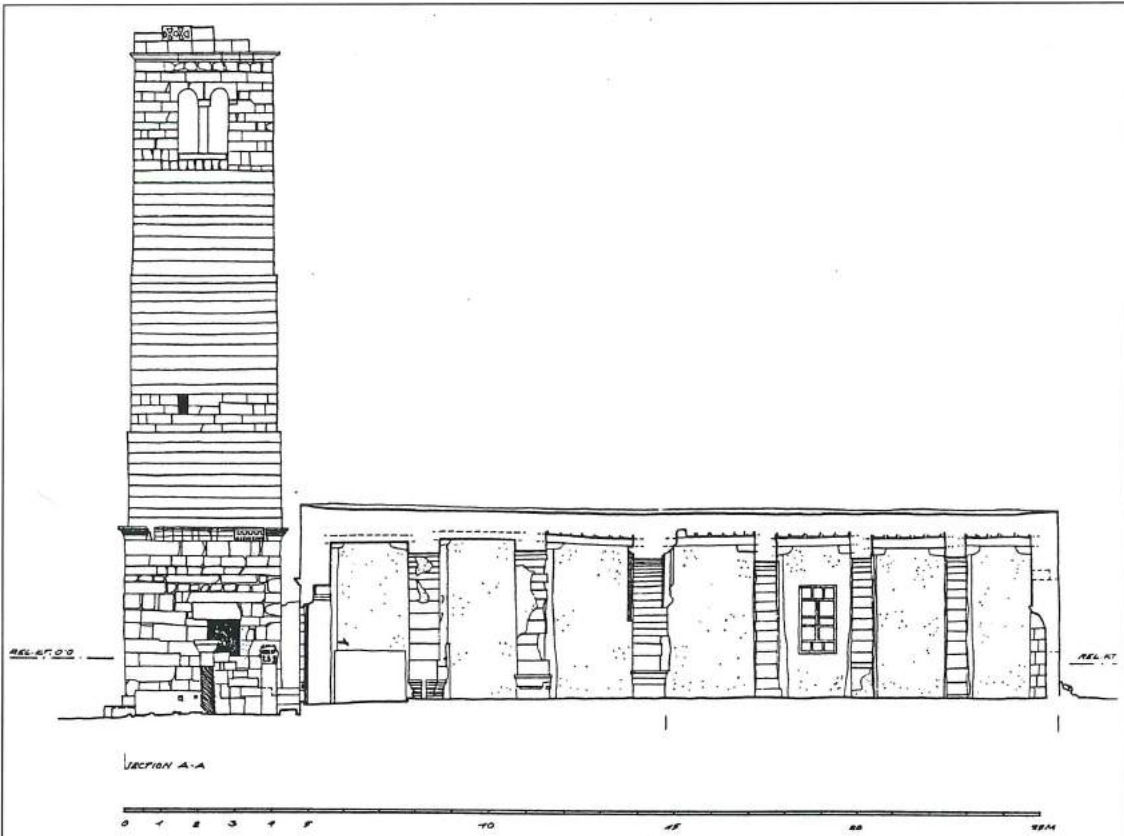
*Al-Bayt*

The impressive mansion at Inkhil may provide a good example of vernacular architecture (FIG. 8). The mansion is composed of three separate compartments, each with one big central room and several, secondary rooms adjoining. Obviously the size and decoration of the doorway accentuates different functions or the relative importance of the various units. It might have been built as a row house, possibly used for habitation by an extended family of several individual households, but it is difficult to suggest a definite function of the individual spaces, as long as the social organization and contemporary way of living is so little known (FIG. 9).

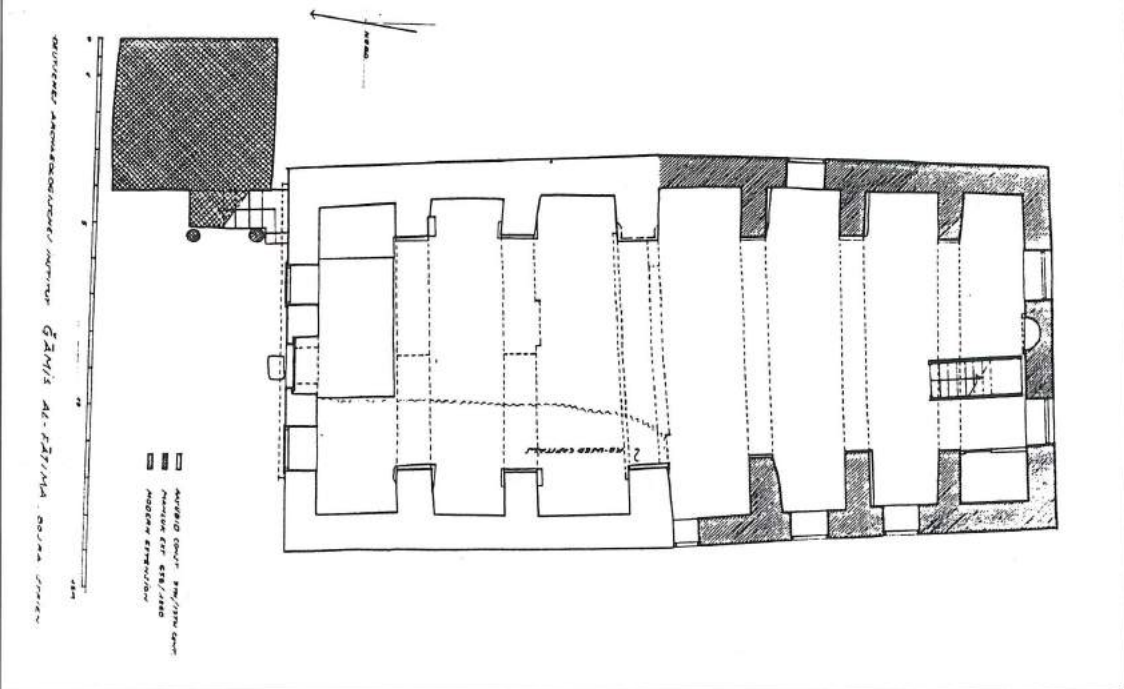
The central bayt is built to impressive proportions, featuring a large hall in the middle rising to a height of about

the tent of the nomads or the house of sedentary people.

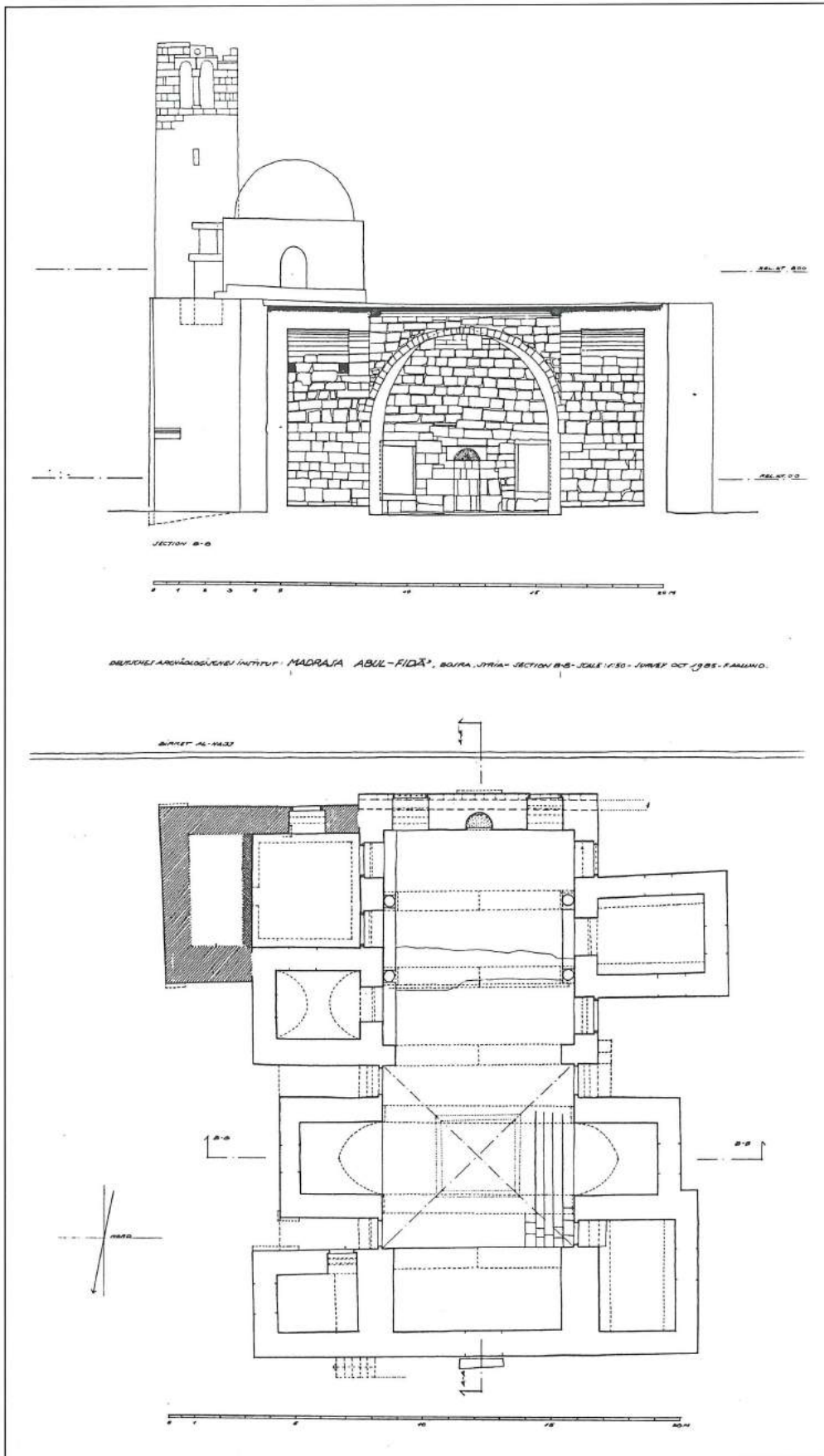
<sup>3</sup> The self-contained compartments are generally referred to as 'bayts' using the Arabic term for 'house' or 'dwelling', whether it might be



DEUTSCHES ARCHÄOLOGISCHES INSTITUT: ḠĀMĪS AL-FĀṬĪMA, BUṢRĀ, ITRĪS-SECTION A-A-JULI 190-JULY 05-1985-KALLING



6. The semi-circular arch of equal, centripetal stones without a keystone is the form generally used for the traditional architecture. Every single stone of the arch is cut to the same curve giving a direct interdependence between the span and the rise of the arch and consequently, a large floor area would result in a similar higher floor-to-ceiling height. Al-Fāṭima Mosque, Buṣrā, built before 1306 (Survey by F. Aalund 1985).



7. More prestigious buildings need a higher floor-to-ceiling height than normally found in local buildings and the subsequent static problems can be solved by adding adjoining rooms or side-*iwāns*, which can provide the required counterbalance to the outward thrust of the transverse arches. Ad-Dabbagha Madrasa, Buṣrā, built 1226 (Survey by V. Hellborg and F. Aalund, 1985).



8. Main facade of the mansion at Inkhil, Syrial, forming a row-house with three individual *Bayts* (Photo by F. Aalund, 1988).

seven metres measured from floor to ceiling. Most astonishing, the vault of stone slabs forms a slightly ovoid shape, whereas the other halls have more traditional stone planks forming a flat roof on each side of the girder arch (FIG. 10). The central- and the eastern *bayt* have one of the separate rooms decorated with an elaborated cornice featuring carved floral motives and facial portraits in the style of the Palmyrene commemorative funeral reliefs adding to the puzzling and enigmatic interpretation of this place.<sup>4</sup>

Textual sources related to Umayyad ceremonies indicate that next to the formal *majlis* used for receptions, there was also a *majlis al-lahwah* intended for entertainments and pleasure.<sup>5</sup>

This description can give a plausible explanation to the plan form of the Inkhil mansion. The prodigious space of the central *bayt* with double floor to ceiling height would then be assigned to ceremonial functions serving as a reception room, or alternatively as an all-purpose room providing access to the secondary rooms, mostly without natural light and possibly serving as sleeping rooms.

The use of the *bayt* as the basic plan for housing has a long tradition in the Middle East. The layout shows great resemblance to Parthian and Sasanian architecture of Per-

sia during the first centuries AD, and a reference to the main palace at Hatra falls near at hand (FIG. 11). This formal structure of grand design is composed originally with two open *iwāns*. At a later time the palace was extended by adding two more in succession and each of them are flanked by secondary rooms in two stories. Apart from the scale and the open front of the *iwāns*, the similarity of planning to the row house at Inkhil is very striking indeed and hardly accidental.

The elaborate plans of the Umayyad palaces of Qaṣr al-Ḥayr and al-Mushatta (first half of the eighth century AD) and the Abbasid palace of Ukhaydir (second half of the eighth century AD) may be considered an assemblage of similar smaller uniform housing units, joined together within a fortified complex of a formal design. Each of the individual units are typically composed of one central room or hall adjoined by smaller rooms on each side (FIG. 12).

It might be sensible to assume that these new, highly sophisticated desert settlements were closely related and depending on an agrarian community, which persisted in the Ḥawrān.

Assuming that the desert settlements are reflecting a contemporary building tradition firmly established in the more fertile parts of the Ḥawrān, it would then be obvious to conclude that they were part of the same cultural establishment, which continued to exist within the Ḥawrān also after the Islamic conquest in 13 AH/684 AD.

Then taking the Inkhil mansion as an example, there is a Syrian vernacular tradition, which form a link between the Parthian, Sasanian and the later Umayyad architecture, indicating a pervasive eastern influence at the plan and form of building, which has lasted quite independently of external influences during the Roman and Byzantine era.

As a concluding remark it is pertinent to quote K. A. C. Creswell, referring to the so-called Roman palace at Buṣrā: ‘...the palace of the Roman governor, a monument, which has been completely ignored in all discussion on the origin of the Umayyad palace and its *bayts*’.<sup>6</sup> The preserved stone buildings in the Ḥawrān still provide an interesting field of research.

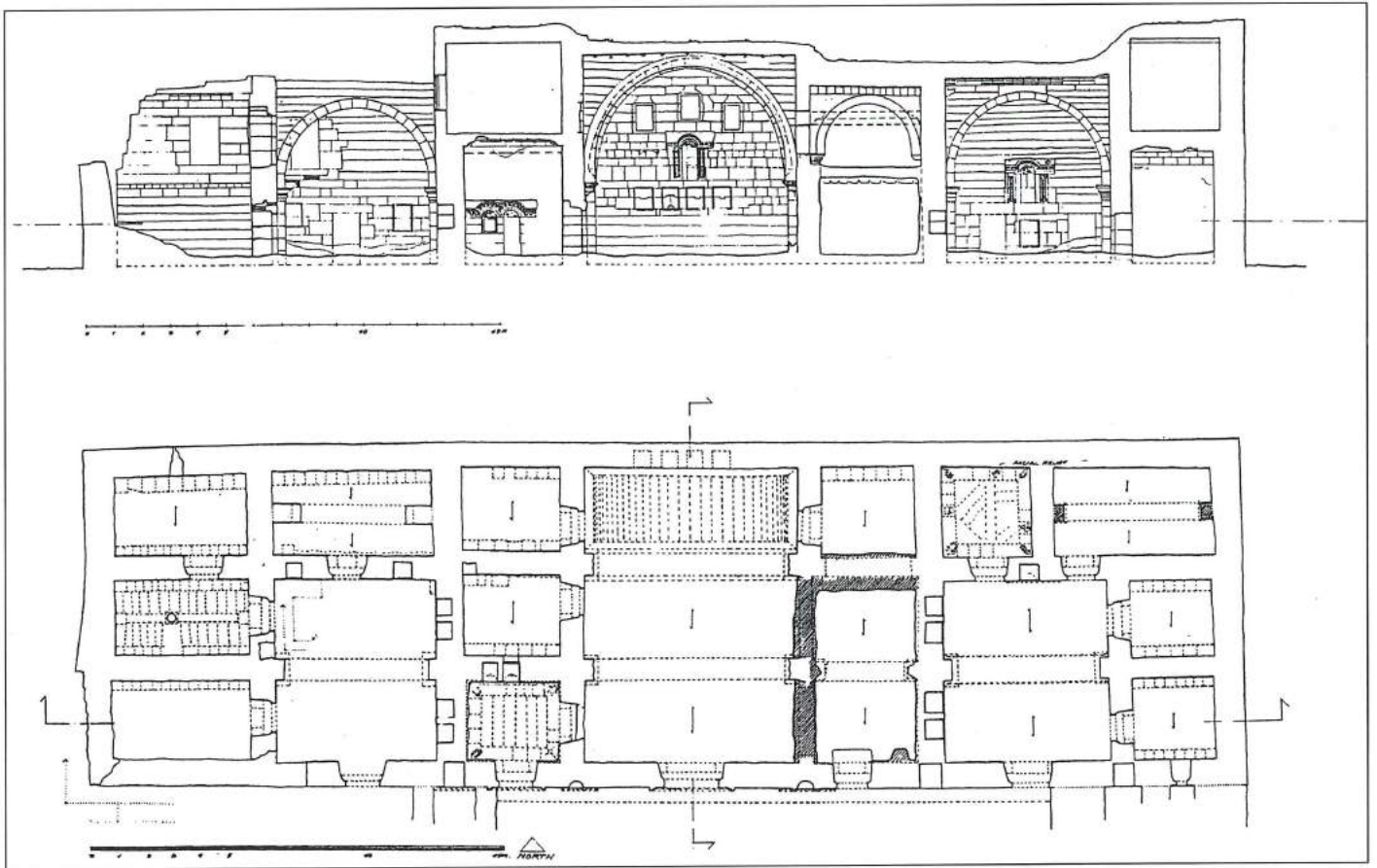
<sup>4</sup> Relating to the classical traits in the ornamental decorations, Butler dated the building to the 2nd century AD; Dentzer-Feydy, discussing the chronology of classical ornament in the Ḥawrān proposes a later dating, possibly 4th or 5th century, arguing that the use of Greco-Roman ornaments ceased by the beginning of the 6th century. Certain construction details corroborate this dating. For example, the interlocking courses to be seen in the large central hall and the sun hood above the tripartite window arrangement are typical features of the Byzantine architecture in the area. Also the shell-niches put up at the interior seem to be re-used fragments, indicating the eclectic style of the architecture and the building could be of a later dated, possibly of the Umayyad period.

For a more detailed analysis of the architectural decoration in the Roman and Byzantine Ḥawrān confer J. Dentzer-Feydy, ‘Décor Architectural et développement du Ḥawrān dans l’Antiquité’, Pp. 261-

309 in J.-M. Dentzer (ed.), *Bibliothèque archéologique et historique*, vol. 124, *Ḥawrān I*, 1985, Paris.

<sup>5</sup> Oleg Grabar, *The formation of Islamic Art*, 1987, p. 148, Yale University Press.

<sup>6</sup> K.A.C. Creswell, *Early Muslim Architecture*, (reprint), New York, 1979, vol. I, part II, pp. 214-15. The monument is published by H. C. Butler, who dates the building from the early Roman period, see *PPUAES*, Div. II, A, pp. 255-260; the reconstruction ill. 229, does not include the staircase in the north-eastern corner of the building; this structure is similar to early Nabataean examples at Mampsis (modern Kurnub) possibly corroborating Sartres view, that the building may be attributed to the Nabataean period of Rabbel II; cf. Maurice Sartre, *Bostra, des origines à l’Islam, Bibliothèque archéologique et Historique*, vol. CXVII, 1985, p.94, Paris.

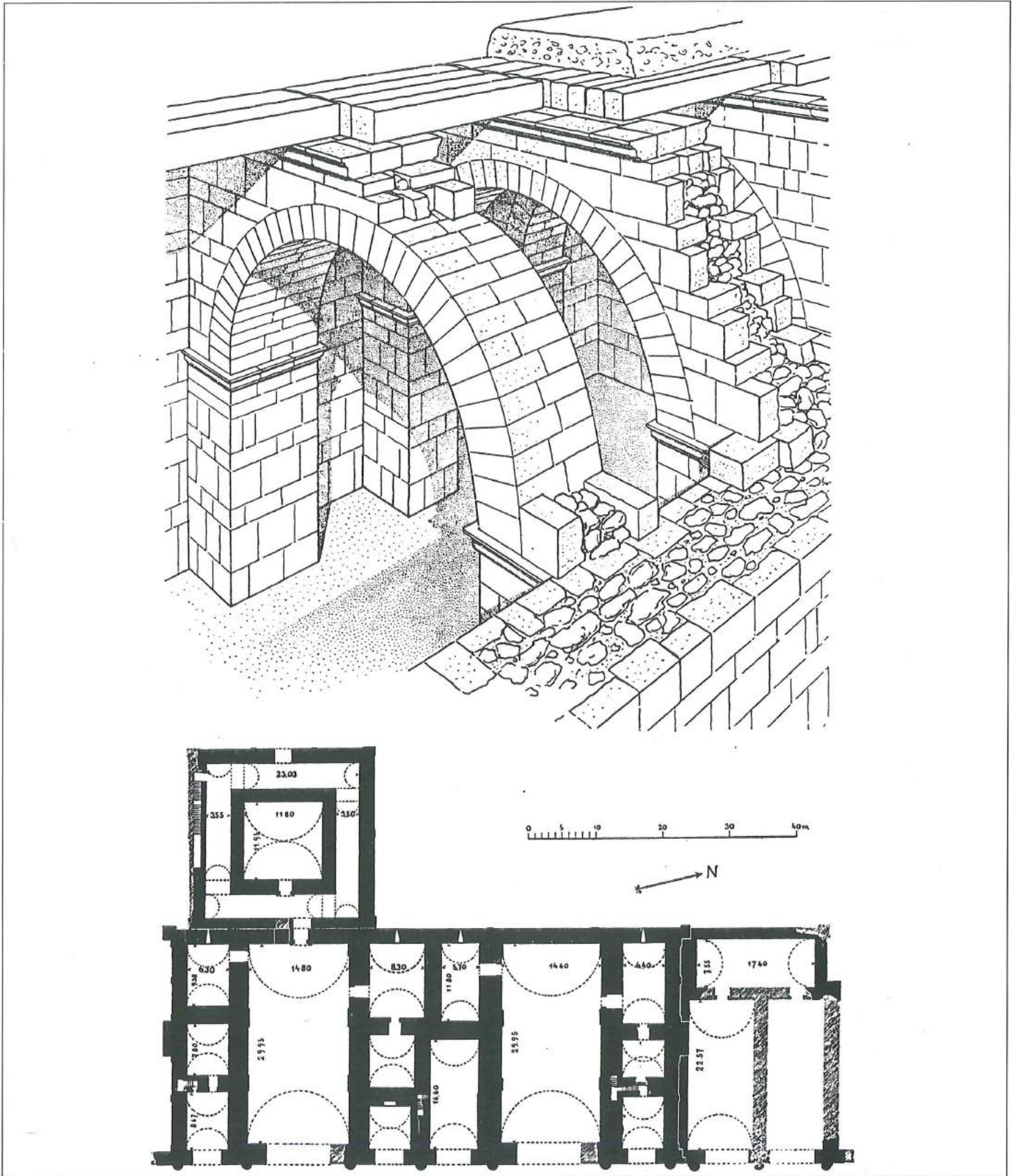


9. Plan and section of mansion at Inkhil, Syria (Survey Eeva-Lisa Rautalathi and F. Aalund, 1988).

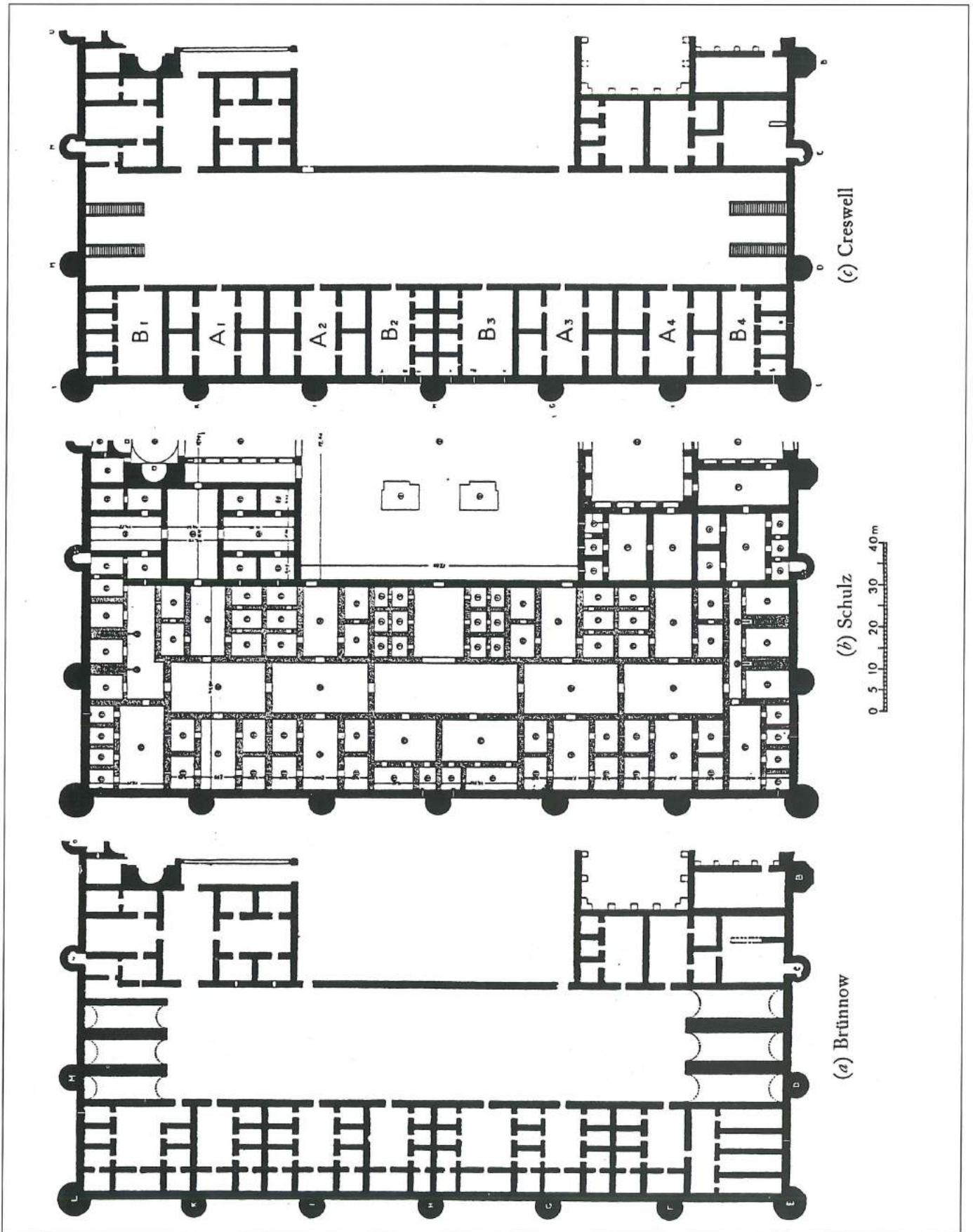


10. Large stone vault in ovoid shape at the rear of the mail hall, mansion at Inkhil, Syria (Photo by F. Aalund, 1988).





11. Hatra main palace, ground plan and axonometric view showing scheme of roof construction. Source: O. Reuther, *Parthian Private Houses and Palaces, A Survey of Persian Art*, A. Upham Pope, (ed.), vol 1, 1939, London.



12. Al-Mushatta: Plan of western side court, attempted reconstructions. Source: K.A.C. Creswell, *Early Muslim Architecture*, vol. I, part II, 1969, Oxford.