A Survey of Islamic Buildings at Amman¹

by

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Between 1927 and 1938 the Italian Archaeological Mission under the direction of Giacomo Guidi, and subsequently Renato Bartoccini, conducted large-scale excavations on Jabal al-Qal'a - the Citadel Hill - at Amman.²

One of the main areas of excavation was the large Courtyard at the North end of the Upper Citadel. Bartoccini cleared approximately half the known area of the Courtyard, and then excavated and did restoration work on the cruciform vaulted Qasr that is attached to the South wall of the Courtyard.³ In his reports he did not publish a plan of his excavations. Between October 15th and 31st 1977 we carried out a survey in an attempt to reconsider the area of the Courtyard, and particularly its later periods, in the light of the current excavations being carried out as a cooperation between the Department of Antiquities of Jordan and the British School of Archaeology in Amman.

The area was planned and photographed, and then divided into constructional phases for a relative chronology; subsequently an attempt was made to attach absolute dates to each phase, given the limitations of surface survey. However in the years since the area was excavated there has been considerable wear and tear and some walls visible on older photographs no longer exist except as fragments: the line of these walls has been reconstructed from the surviving fragments and the details from photographs (see fig. 1).⁴

The Platform and Construction of the Courtyard

The natural profile of the hill at the north end of the Qal'a appears to have been a gentle slope down from the summit of the hill to a saddle connecting the Qal'a to Jabal Husain. The lines of earlier defensive walls excavated some years ago run under the line of the present wall at the north end. The current line of walling, standing some ten metres above the saddle, is therefore an artificial platform.

The construction is stepped with each course recessed approximately 5 cm from the one below, and is of rusticated ashlar masonry with two surviving courses of plain ashlars in places. There are large buttresses on the northwest and northeast corners which may have carried towers and one on the northeast projection of the Courtyard itself which clearly did not carry a tower.

On the west side the platform walling connects with a section built from plain ashlars, and in this section is a gate. On the east side the northernmost section is covered by the dump from the Italian excavations, but the join onto the north wall of the Courtyard is visible. The Courtyard projects 15 m further to the east than the northern area.

The superstructure of the Courtyard is composed of smooth-dressed masonry, and the structure of the east wall clearly indicates that the superstructure of the courtyard and the platform wall are contemporary: rusticated masonry was used for the platform and smooth-dressed for the superstructure. It is not possible to measure the width of the platform wall, but the outer wall of the superstructure is 90 cm.

The superstructure consists of two spaces divided by a wall with two visible gates. To the north of that wall no original structure survives with the possible exception of part of a line of foundations, (see below p. 9). The area south of the dividing wall is a quadrilateral ornamental courtyard of which three sides are visible, but which may have extended as far as the west wall of the Qal'a. The north wall is decorated with rectangular podia, square pilasters, and semicircular niches surmounted by conches. All the podia were removed in the subsequent reconstruction (Period 3) with the exception of two adjacent to the central gate, and parts of two others incorporated in later walling. However thay have now been restored.

Along the East wall there is a series of five rooms: the northern room (E5) is enclosed like

the better preserved southeast corner room (SE); room E4 is longer than the others and may once have been divided in two--the northern half has an enclosing facade with a decorated doorway.

Rooms E1-E4 are open-fronted with broad dividing walls (l.50m), and the springing of a vault is visible on the southernmost of these walls. On the court facade of the dividing walls are niches similar to those on the north wall, and these are flanked by square pilasters, in the same way as on the north wall.

In the second stage of development blocking walls were built across the fronts of the two southern rooms (El and E2) out of small ashlar blocks. The doorways are fitted with stone door-stops and bolt-holes. In room E5 a transverse arch is fitted against the outer wall and the stumps of two others are visible. These should be interpreted as supporting a second storey. A third broad stage of development should be seen in the further subdivision of these two rooms with unmortared rubble walls, and the addition of a doorway in E3⁵.

Between the east side rooms and the south-east corner is a gap now filled by later building. In the southeast corner is a room (SE) whose walls are bonded in with the east wall but not the south wall, with a roof supported by transverse arches. The door has a flat lintel and a segmental relieving arch. At a later date the room was filled up and a new floor inserted at a height of approximately three metres above the original floor level. It seems likely that the filling is associated with the later construction of the Citadel defences. Fifteen metres west from the southeast room bonding stones projecting from the south wall indicate further structures now disappeared.

The Buildings in the Courtyard (fig.1)

A glance at the Courtyard today quickly shows that the area was completely built over at a later period by a series of buildings. Bisecting the area of the Courtyard a street of columns provides the main access from the south of the Courtyard to the northern area. This street is 10m wide with a roadway of 5m between kerbs. The paving is of limestone slabs 55cm wide and

of varying length. Running diagonally along the northern part of the street is a drain covered by paving blocks that empties into a cistern opposite the doorway to Building 4. The kerbs have a double step and vary between 22cm and 45cm in width. The columns are 40cm in diameter with plain bases 63cm square. The consistency of the column size indicates they were made for the purpose and not reused from elsewhere. At its south end there was a 2m wide gateway into a court, and at the north end there is access through a 3m wide gateway in the Courtyard wall to the Northern area. Today there is a step and a raised threshold, but Bartoccini's excavation photographs6 show that there were five steps, and that the two surviving podia that flank the gateway were transformed into seats with armrests of the typical Islamic quartercircle form. As a result the street is not suitable for wheeled traffic, as are, for instance, the colonnaded streets of Jerash, and is more likely to be a ceremonial way.

The centre line of the street is aligned from the north door of the Qasr to the gateway in the courtyard wall. However the kerbing stops short at the wall of the small court at its south end (Court 1). Rather the evidence appears to indicate that the kerbing and columns are contemporary with the walls on either side, for the spacing of the columns has been adjusted to avoid placing a column in front of the entrance to Building 4. On the other hand the paving of the street is aligned with the original walls of the courtyard rather than the street it underlies, while it also extends the full length of the courtyard with a width greater than the later street. It seems likely that this represents a paved way belonging to the original period of construction.

Between the street and the Qasr it was possible to piece together the location of a court 25m square (Plate III), the same size as the outside dimensions of the Qasr. The court extends beyond the limit of the earlier paved way and thus has partly a paved and partly an earth surface. In the northeast corner was added a room of unmortared rubble walling (Plate III) and an L-shaped seat, while there are traces of a wall cutting off the western third of the court. The line of the west wall of the court is traceable in four places, and is the outer wall of a building on the west side (Building 7), which is unexca-

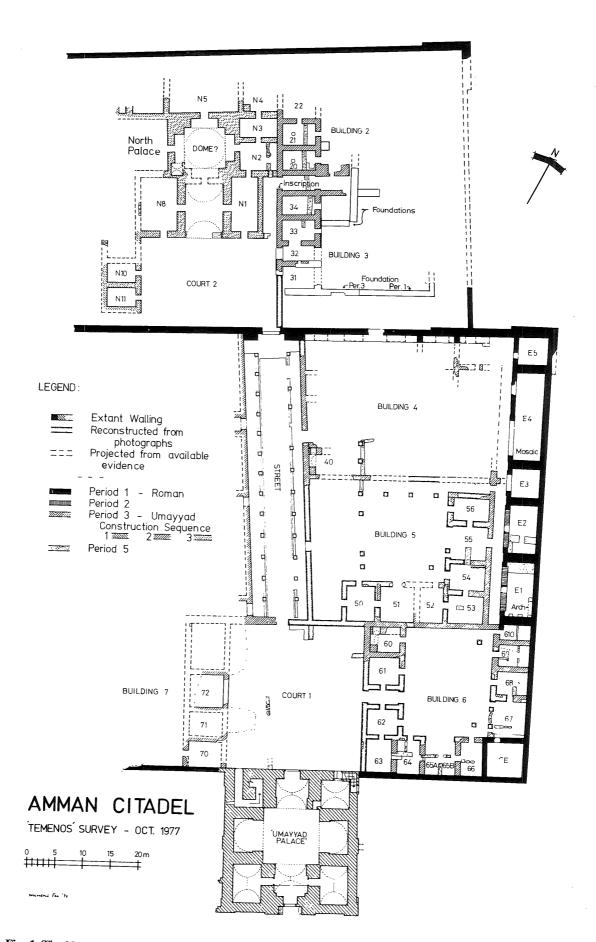


Fig. 1-The North End of Jabal al-Qal'a, Amman.

vated. Two rooms are visible: room 70 is part of the present-day track along the west side of the Qasr, and in it a single door to the west and a large patch of plaster studded with small stones can be seen. Parts of a second room, (72), may be seen in a bulldozer cut, and this room may have been an entrance opposite that in Building 6. Similar buildings also exist west of the street, but these are unexcavated. There are three entrances from the street and some traces of rooms can be seen in surface walling in the unexcavated area.

The structures on the east side of the street may be divided into three buildings (Buildings 4, 5 and 6), each following a basic common pattern.

The construction is identical to the west side of the street, but appears to be different because the walling here does not incorporate column bases for strengthening. Building 6 in the southeast corner is the best preserved, but the less well-preserved buildings 4 and 5 were similar. The rooms are arranged around three sides of the central courtyard with a single entrance from court 1 to the west. The room opposite the entrance gate is open-fronted and seems to function as an iwan, while room 65 on the south side may be the same (Plate II, 2), but the evidence is not decisive. Construction is of plastered, mortared rubble walls; all rooms have doors to the court, and most have interconnecting doors. All doorways are open without stone doorstops of bolt-holes.8 All the floors seem to have been of earth. In room 65A there is a cistern fed by a drain running down from the roof, and there is a second roof drain on the central court facade, between rooms 68 and 69. The lining of these clean-water drains is of two layers, a base of lime and wood-ash mortar, the same material used for building the walls, and a facing of harder white cement which includes red chips, probably of crushed pottery.

In room 60 there is an arrangement of two arches, one set at right angles to the other, and unbonded to the outer walls, although the construction is identical. The shape of the arches is rough but it appears to be semi-elliptical with a string-line. Across the front of the smaller recess thus formed is a line of stones making a basin, though no sign of drainage can be seen. The purpose of this room is uncertain, but the

type recurs in the survey area in Building 4 (room 40): in the North Palace the characteristic square block can be seen in the partly destroyed room N4, while there is another example of the small arched recess with its single string line in an unexcavated building west of the North Palace. One possible suggestion is a washroom or toilet.

A colonnade of columns made from small rubble stones and gypsum mortar⁹ was later added to the courtyard together with a pair of columns in the east *iwan* (Room 67). The next stage of development was to block off the mouths of the *iwans*, narrow the doorways (Rooms 63-66) or block them off and subdivide the rooms. Both these major stages of rebuilding seem to have kept the original floor levels. Since the excavation three concrete huts were built in the northeast corner, and a fourth adjacent to the entrance.

Building 5 is divided from Building 6 by a common wall into which parts of both buildings are bonded: it is then divided from Building 4 by a further wall which was demolished by the Italian excavators. Only the east row of rooms survives to any extent (Rooms 53-56), but the survival of nine rubble and mortar column bases shows that there was a row of rooms along the west side. However, Bartoccini found no trace of them and it is possible that these were demolished during the lifetime of the building. Access to the east rooms was gained by a narrow passage through two doorways in Building 5. On the east side is an iwan (Room 55) similar to room 67, where one column base survives, and a second may be seen in plate IIb, 2. There is also slight evidence to suggest that room 51 was an iwan of this kind, but the building of a sunken concrete hut there has confused the evidence.

Very little remains of building 4, as this area was the first part of the courtyard excavated by the Italian Mission and much of the walling was demolished in order to obtain a clearer idea of the Roman remains.¹⁰ However the west wall facing the street exists and the well-preserved double arch of room 40. In addition two surviving rubble and mortar column bases and stubs of walls indicate a courtyard and rows of rooms along the east, north and west sides, together with an alley to gain access to the east side rooms.

The Northern Area

The remains of a building aligned north to south have always been visible outside the courtyard wall at the northern tip. This building was described by Conder, 11 and ascribed to the same period as the Qasr on the basis of two architectural fragments. He describes a square court with three recesses on the north, east and south sides. A small scale plan of the same building was published by Butler, who saw a semicircular apse. 12

The east side of the building has since been cleared together with a pair of rooms on the west side of the court in front, but no apse was revealed.

This area is in fact divided into three buildings - Buildings 2, 3 and the North Palace. ¹³ The division is marked primarily by a series of three straight joints through which the plastering of Building 2 continues. The remains of Buildings 2 and 3 consist of a row of rooms facing east with a dividing passage that has been turned into an L-shaped alley by the later addition of the North Palace. The surviving range of rooms must have faced onto a pair of courtyards with additional ranges of rooms on the north, south and east sides.

On the south side of this area runs a line of foundation work which makes a turn to the north at its east end. On this corner stands a column base of Roman fabric. 14 There is a slight difference between the stonework of one end and the other: the west end is of a softer more worn limestone, and incorporates a projection aligned with the foundations of building 3. In the corner of this join is a drain from the roof of the type described above (p. 6). It seems reasonable that this western end of the foundation is an integral part of building 3, while the east end is possibly earlier, and was reused. For this line marks the facade of a south range of rooms for Building 3.

When the area was first excavated the west wall of Building 3 extended as far as the gate in the Courtyard wall and slightly narrowed the passageway. From 32 is an axial entrance on the west side with a doorway into room 33, and there is one further room before the dividing passageway. The north wall of this last room projects eastward, and in the adjacent area is a

series of foundations made of well-cut pinkflecked limestone ashlars, of which one line makes a straight joint with the foundation of the Building 3 walls. The northwest corner of Building 3 incorporates a reused block with a well-cut Greek inscription referring to Philadelphia, but this has not been read yet.

North of the passageway two rooms survive that belong to Building 2, including a kind of basin in Room 20; but the area is too destroyed to give a clear picture. In Rooms 20 and 21 a reused column of 40 cm diameter was later added, and at a still later stage blocking walls were built across Rooms 34, 20 and 21. These rest on thick floor deposits which were exposed in excavation, and because the walls block the doors it may be assumed that these represent a very late stage.

The North Palace

The North Palace is the latest building in the area. It is obviously of some architectural significance, although in a ruined and largely unexcavated state. The building faces onto a small court, lined on the west by a series of rooms of which two have been excavated. There is slight evidence to suggest a colonnade of reused columns. The plan of the Palace consists of a vaulted hall with a square chamber behind. On each side of the vault there are side rooms, and on the east side at least two more side rooms next to the square chamber (Rooms N2/3). Without excavation it is impossible to be certain about corresponding rooms on the west side. Behind the square chamber the remains are eroded, but there is evidence to suggest that the building stretched back to the platform wall, with a large room, or possibly a small court, directly behind the square chamber (Room N5).

The facade, the vault and the square chamber are faced with ashlar masonry, while the reverse sides of these walls¹⁶ and the remainder of the walls are plastered rubble, of the same kind as Buildings 2-7. The vaulted hall is open-fronted with the exception of a shallow rectangular buttress at the entrance (20 cm deep)¹⁷, and may therefore be described as an *iwan*. However there is a later unmortared partial blocking wall. The springing of the vault survives on the west side; below it is a double

string line, and the door to the side room has a semi-circular arch. There is limited evidence of a cross-wall dividing the vault from the square chamber, in the form of disturbed stones visible on the surface.

The square chamber is of a similar style of construction, with a second complete doorway on the west side. Other doorways to the north and east are visible, all three set in recesses which give a double-pointed effect to the corner buttresses. These buttresses with the exception of the one in the southeast corner are enormously thick, and it may be suggested that they were intended to carry a dome. In the southeast corner is part of a small vault which must be for a cubicle, but without excavation the purpose is unclear.

No architectural decoration remains in situ but there are a number of pieces in the rubble. Conder recorded bases for niches similar to those in the Qasr but with vertical slots in place of relief decoration, and a niche arch with dogtooth decoration.¹⁸ Bartoccini photographed two more similar niche bases.19 Two different kinds of fragment with blind slots can be seen today (Pl. V, 2), and a niche with engaged columns. The majority of the architectural stonework was found in the court in front of the building, and it may be suggested that the facade carried most of the decoration; the remainder is apparently connected with the fall from the dividing wall betweem the iwan and dome chamber.

The closest architectural parallels for this building should be drawn with the Qasr. The doorways to the south side rooms in the Qasr have the same round arches, now partially concealed by repairs. The employment of a double string line set against a plain stone vault is to be found in the main 'iwans' of the Qasr, while the side rooms employ a single string line. The niche construction in the two buildings is similar but not identical, while the North Palace in general is built from cheaper materials; but a close relationship between the two is clear. Blind vertical slots, found on three different kinds of decorative fragment associated with this building, are outside the tradition of Classical Syria but are widespread in Iraq and Iran: in particular the combination of vertical slots and niches with engaged columns and arches with dog-tooth

decoration may be seen at al-Ukhaidir in Room 32.²⁰ If we regard the decoration as drawn from eastern models, we may also consider the ground plan in the same light: in fact the plan of an *iwan* with two side rooms and a dome chamber behind comes from the same tradition.²¹ Thus the builders appear to have intended the building to have an eastern style, though like the Qasr it seems to be of local workmanship.

The palace was never finished, or it collapsed soon after its construction, for above a height of two metres the wall between room N2 and the passage is constructed of small rubble and gypsum mortar, a technique that is obviously distinct from but always closely associated with the original construction of these buildings. There are fallen transverse arches in this technique in rooms N2 and N8. They may be compared with the rubble and mortar colonnades in Buildings 4, 5 amd 6. Subsequently the door from N2 to the passage was blocked up, and a partition wall built that overlaps the blocking.

Chronology

To summarise the development of the area, construction has been divided into five broad periods, based upon the structural sequence. Because stratigraphic evidence is not available, some of the relationships are tentative.

Period 1: Construction of the Courtyard

It has been suggested above (p.5) that the surviving superstructure of the courtyard is contemporary with the artificial platform. Unfortunately the surviving remains of the layout are fragmentary, and its interpretation depends on the fact that the area consists of two spaces, one of which is a decorative courtyard. Butler and more recent opinion have considered it a temple and temenos of the 2nd-3rd centuries AD.²² The 90 cm east wall suggests that the platform was not primarily intended as part of the city defences in this period.

Period 2

Relatively little modification appears to have taken place before Period 3. The open

fronts of rooms E1 and E2 were blocked up with walls of small ashlar masonry of the type common at any time between the 4th and 9th centuries AD. The construction incorporates a recut Roman architectural fragment. While possibly Byzantine, because of a graffito cross on the door jam of room E2, locating this addition before, rather than after the Period 3 construction, is tentative.

Period 3: Redevelopment of the Courtyard

Examination of the buildings that cover the area of the courtyard, and those in the Northern area, shows that the construction technique employed is remarkably consistent. Buildings 4 to 7 are contemporary: the surviving parts of Buildings 2 and 3 suggest that they were of similar layout, while the North Palace is a little later. The Qasr is tied into this plan, for court 1, adjacent to it, lies on the same axis and is of the same size (25m square), while as noted above (p. 10) the North Palace and the Qasr are similar architecturally.

Clearly this area is a zone of public buildings for the Qal'a dominated by two palaces connected by a columned street: the street is in Roman style, while the palaces have strong Sassanian connections. Further, although the archaeological evidence is not unequivocal, the main access to the street, and to the complex in general, was apparently through the Qasr: the other possible access routes are little more than alleys. In this context the area would have to be considered a single palace or palace complex, although it is known that the buildings were not put up at the same time.23 Whether the Qasr stood at the entrance to this complex or not, it was clearly the main hall for public audience, with two large doorways, while the North Palace occupies a more secluded position.

There are two alternative sources of dating for this complex. Construction in the period 3 buildings, with the exception of the Qasr, is of a common type: that is, walling 96-107 cms or 120-130 cms wide, coursed rubble bonded with a lime mortar containing wood-ash. The surface is smoothed with a great number of snecking stones, and then plastered with the same mix as the mortar, which is then studded with small stones, and/or stamped with wedge-shaped key-

ing impressions. For a finer finish there is a second layer of a hard white cement with an admixture of crushed pottery, but this is only found in the staircase of the Qasr and on clean-water drains.²⁴ In the C Area excavations 120m away, this type of construction, albeit less consistent in its wall widths, is connected with the Umayyad redevelopment in that area, although plaster studded with stones is in addition a feature of the later modifications to the Umayyed defensive wall.

However a second independent source of dating is also available, and this may help to confirm the comparison. A sherd in the mortar of a dislodged stone from the west wall of Building 4 was of a red ware, with a black core and a plain white slip, a type normally associated with the Umayyed period. Surface sherding on the roof of the Qasr indicates mostly Byzantine red wares, but also included occasional mortarcovered sherds with red paint on white slip, which is characteristic of the Umayyad period. To balance this minimum dating, the complex must have been put up before the terminus date for period 4 which is probably the 9th century AD. After the erection of the Period 3 complex, the remaining occupation of the area represents development and modification of the Period 3 plan.

Period 4

The first stage of modification to the Umayyed plan was in the completely different technique of rubble and gypsum mortar, a technique widely found in Iraq and Iran.

The North Palace was rebuilt with transverse arches in the side rooms, and a colonnade of rubble and mortar columns or piers was added to each of buildings 4, 5 and 6, together with a pair of columns in each *iwan*. This style of column and colonnading is found in the east in Sassanian times, and early in the Islamic period, but tends to die out in the 9th century, ²⁵ and this gives us a rough terminus of the 9th century for period 4.

Period 5

Period 5 consists of two phenomena: firstly evidence for the continued occupation of all the

standing buildings for a considerable length of time, in the form of the addition of partition walls that were invariably unmortared. Two features stand out: firstly the use of reused column drums for roof support and door jambs, and secondly the building of a long bin alongside a wall (Room 54); both are found in the late phase, thought to be 11th century, on Area C. The second phenomenon is the construction of some walling after the abandonment of the area, indicated by walls that block doorways (Buildings 2 and 3) and the building of a wall over the stumps of the rubble piers in Buildings 4 and 5. No certain date can be offered for these two phenomena on the basis of surface survey.

SUMMARY

The sequence of occupation in the Islamic period in this area shows three main phases of continuous occupation, then abandonment and some slight further building, for there is no sign

Footnotes

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 Mr. Mark Watt, for several days of invaluable help. The
 survey was financed by the British School of Archaeology in Amman, and the Wright Fund of Cambridge
 University.
- 2. R. Bartoccini, "Ricerche e Scoperte della Missione Italiana in Amman", Bolletino dell' Associazione Internazionale per gli Studi Mediterranei, a.I., 1930, nr.3,pp.15-7 (Bartoccini 1930); "Scavi ad Amman della Missione Archeologica Italiana", a.III, 1932,nr.2,pp.16,23 (Bartoccini 1932);a. IV, 1933-4,nr.4-5,pp. 10ff.(Bartoccini 1933); "La Terza Campagna di Scavi sull' Acropoli di Amman", Bolletino d'Arte del Ministerio dell' Educazione Nazionale, 1934 (Dicembre), pp.275-285 (Bartoccini 1934).
- 3. On the Qasr (Umayyad Palace) see: M. Almagro Basch & A. Almagro Gorbea, The Arab-Spanish Restoration of the "Umayyad Palace" at the Citadel of Amman, unpublished report in the Registration Centre of the Department of Antiquities; J. Warren, "A Sassanian Attribution for Two Buildings in Jordan", Art and Archaeology Research Papers, XI (1977),pp.49-55; H. Gaube, "Amman, Harane und Qastal, vier Fruhlslamische Bauwerke in MittelJordanien", Zeitschrift des Deutsche Palastina-Vereins, 93 (1977),pp. 52-87.
- Photographs in Bartoccini's reports, and Department of Antiquities files, old series, nos. A580-8, dated November 1943.
- 5. Bartoccini 1934,p.277,ill.5.

of abandonment in periods 3 to 5. This is a different result from the C area excavations although such a result cannot be so closely defined on present evidence; for the C Area sequence shows Umayyed occupation, abandonment, then reoccupation for a short period, and then a second abandonment. Thus it seems likely that in this area are to be found the longest occupation sequences for the Islamic period on the Qal'a.

There are two basic constructional periods in the area, with a number of modifications to each; firstly the Roman platform and courtyard, probably for a temenos, and secondly its conversion into a Palace complex 150 metres long, probably in the Umayyad period - the first half of the 8th century. Although two buildings are decorated, the remainder are curiously of plain plastered construction, which has tended to obscure the relationship with the buildings of finer construction, but of that relationship there is little doubt.

- 6. loc. cit., p. 281, ill.19.
- Similar seats exist at the south entrance of the Qasr. cf. R.W. Hamilton, Khirbet ul-Mafjar, p.27, Pls.III.2.& IV.2.
- 8. Plain doorways to the outside are not well suited to the wet Jordanian winters: buildings that continued in use often had these doorways narrowed, blocked up, or fitted with an inserted door-frame. Iwans were blocked up for the same reason.
- 9. Traces of four survive and see Plate IIb.
- 10. Bartoccini 1930, p.20, Pl.IV.1
- 11. C.R.Conder, The Survey of Eastern Palestine, Vol. 1, The Adwan Country, p. 63.
- 12. H. C. Butler, Publications of the Princeton University Archaeological Expedition to Syria, Div.II, Sect. A, Pt.I, pp.41-2 and ill. 26.
- 13. An alternative explanation would regard the rooms facing east as parts of one building with a central entrance at the L-shaped passage. While this division is not impossible, it fails to account for the entrance at Room 31, or the fact that the walls adjoining the passageway extend beyond the east facade of rooms 31-34 and 20-22.
- 14. It is not known to the author whether this column base was found in situ or is a restoration.
- 15. Bartoccini 1934, p. 277, ill. 4.
- 16. This type is duplicated in the Umayyad defensive wall.
- 17. A strengthening buttress is in fact usual on early iwans, eg. Taq-i-Kisra, or Bab ul-'Amma at Samarra.
- 18. Conder, op. cit., fig.2. facing p. 60.
- 19. Bartoccini 1933, p.20, Pl. IV, ill. 9.
- K. A. C. Cresswell, Early Muslim Architecture, 1st. Ed., Vol.2, Pl. 15c & fig. 49, p.68.

- 21. For examples of dome chambers, some with related iwans see B. Finster & J. Schmidt, "Sasanidische und FruhIslamische Ruinen in Iraq," Baghdader Mitteilungen, 8 (1976), pp.70-73
- 22. Butler, op. cit., pp.41-2.
- 23. A sequence of construction is visible moving from south to north. The Qasr was built first, then the courtyard buildings and street, and lastly the North Palace. See construction sequence on the plan.
- 24. This style of plaster is recorded from the last phase at Qasr Hallabat, Qasr Mshatta, Khirbet ul-Mafjar (Hamilton p.49), and the "Umayyad Palace" in Jerusalem.
- 25. Columns of rubble and mortar with plain square bases, or the equivalent shape in brick, are common in the Sassanian tradition, either freestanding or as engaged columns. In the 8th Century, the **Dar ul-Imara** at Kufa (**Sumer** XIX pp.36-65) and al-Ukhaidir (Cresswell, op. cit., p. 70 fig. 52 and Pl. 15d) illustrate their use, but they are rare at Samarra (9th Cent.)-four houses have individual columns (Dept. of Antiquities, **Excavations at Samarra**, **1936-39**, p.35 fig. 16)- and absent from Siraf (Whitehouse, **Iran**, vols.6-10) in the 9th/10th centuries.

