

**THE FORTIFICATIONS OF QAL'AT
'AMMAN ('AMMAN CITADEL): PRE-
LIMINARY REPORT**

by
Alastair Northedge

Introduction

Qal'at 'Amman ('Amman Citadel) has always been one of the more poorly understood archaeological sites in Jordan. On the whole the state of the remains reflects that in being unclear to the visitor. One reason is that the site is a very complex one, with remains from a variety of different periods. A second is that the attractive architecture of the Roman period, the foundations of the Temple of Hercules, and the *temenos* of the Northern Temple (Fig. 1), which interested an earlier generation of scholars, are by no means the latest structures of architectural significance at the site. Rather, as recent archaeological work, by the late Mr. G. L. Harding, Dr. Fawzi Zayadine, Mrs. C.-M. Bennett, the Spanish Archaeological Mission, and the present author, have tended to show,¹ the successive occupations of the Early Islamic period represent a considerable degree of change in the character of the settlement, change which was largely ignored by Butler and Bartoccini.

One way to study the nature of the change is to examine the sequence of the fortification wall, in as far as periods of work on the fortifications reflect periods of development in the city. The genesis of the project lay in the discovery, during the course of Mrs. Bennett's excavations in Area C, that one sector of the wall at least (Sector 8: Fig. 2) was dateable to the Umayyad period (41/661 - 132/750), and was not Roman, as had long been thought.² Even apart from the question of sequence, this was an important prospect: no other urban fortifications of the Umayyad period have yet been discovered.

Our plan then was to work out the sequence of the fortification wall, and plot how much of the wall was Umayyad. A

second dimension was added to the project in the course of the first season by the discovery of the well-preserved plan for a gate of Roman date (Gate C: Figs. 8-10), apparently belonging to the *temenos* of the Temple of Hercules. The *temenos* turned out to be closely connected with the fortifications, and, by the kind permission of Dr. Adnan Hadidi, Director General of Antiquities, we hope to include a treatment of the temple and its *temenos* in the final report.

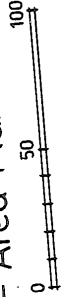
Two seasons of fieldwork for the project were conducted: September 8th-October 25th 1979, and August 22nd-October 4th 1981, under the joint sponsorship of the Department of Antiquities and the British Institute at Amman for Archaeology and History. The workmen were supplied by the Department of Antiquities, and financial support was generously supplied by the British Academy, the British School of Archaeology in Jerusalem, Ashmolean Museum, the Palestine Exploration Fund, and the Seven Pillars of Wisdom Trust. I would like to record my thanks to Dr. Adnan Hadidi, Director-General of the Department, for his kindness and cooperation, and to Mrs. C.-M. Bennett, Director of the British Institute, for her willingness to cooperate between her excavations at the Qal'a and ours. My thanks also to the staff of the two seasons: (1979) Virginia Northedge, Andrina Bamber, Neil Mackenzie, and Susan Balderstone (architect); (1981) Elizabeth Errington (pottery), Abigail Jones, Timothy Crump and Jason Wood (fortification survey), also for additional work by Richard Brotherton (survey) and Judith Mackenzie (architectural fragments).

The present article sets out the immediate results of the fieldwork, in terms

¹ Harding, 1951; Zayadine, 1977; Bennett 1975, 1979; Bennett & Northedge, 1977; Northedge,

1977, 1980; Almagro & Olavarri, 1982.
² Bennett & Northedge, 1977: 173-5.

Amman Citadel - Area Plan



Original Scale 1 : 1000
 Susan Balderstone Architect.
 Sources : Spanish Archaeological Mission -
 Aerial Survey Plan 1 : 1000 - 1978.
 C.R. Conder -
 Survey of Eastern Palestine 1889.
 A.E. Northedge -
 Amman Citadel - Temenos Survey 1978.

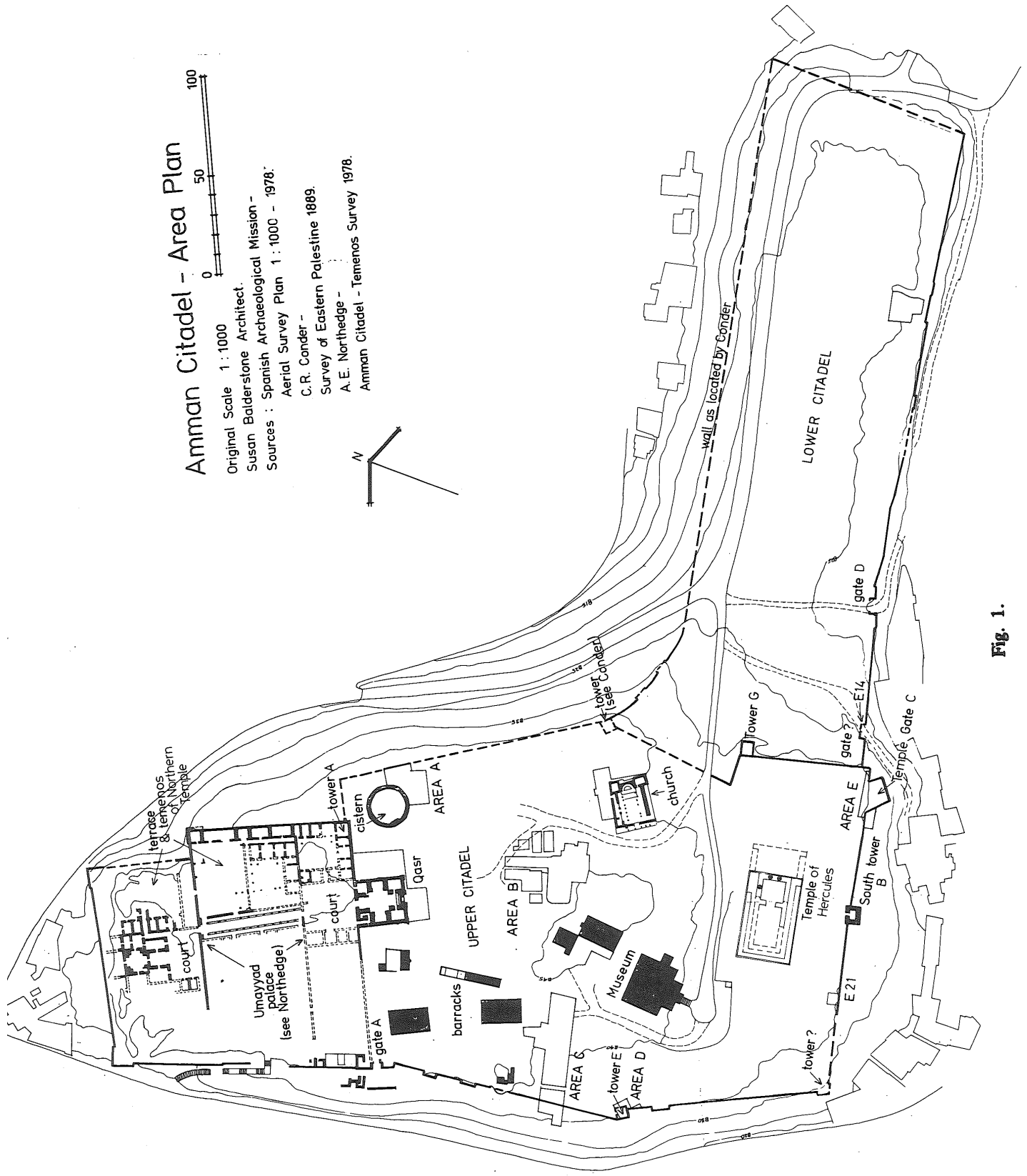
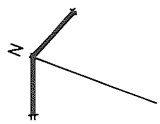


Fig. 1.

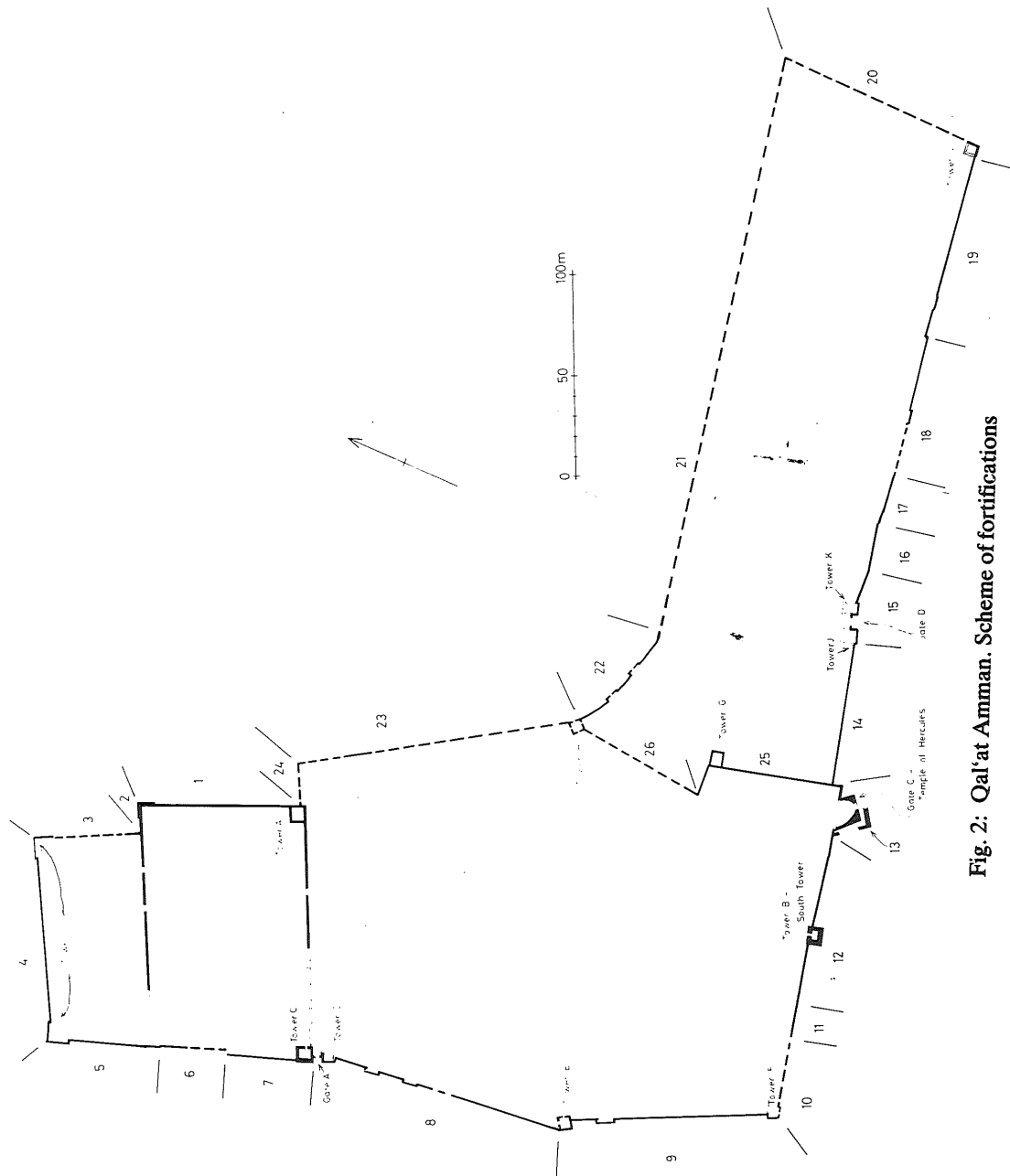


Fig. 2: Qal'at Amman. Scheme of fortifications

of the development of three sectors of the fortifications, each with a different history, and gate C — the gate of the Temple of Hercules; it concludes by discussing the *temenos* of the Temple of Hercules, and the overall development of the fortifications from the second century A.D. onwards.

The Fortifications

Fortification of the Qal'a has had a long history. The junction of two walls, possibly belonging to a citadel and fortification wall, was excavated outside the line of the platform of the Northern Temple in the 1960's, and suggested to be Middle Bronze in date.³ There are several fragments of an Iron Age wall, particularly in the southeast corner, where Dr. Fawzi Zayadine has uncovered a sequence of walls from the Iron II, Early and Late Hellenistic periods.⁴ The present project concentrated on the fortifications that form part of the present wall line.

The fortifications are complex, with many changes of construction and line. In addition traces of rebuilding are visible at many points. The fortifications were divided, for the purposes of analysis, into twenty-six sectors of curtain wall, which differ in line or construction. Ten towers (including gate-towers) and three gates could be identified or implied from constructional features. The schema is presented in Figure 2.

(1) Sector 14 (Fig. 3)

Approximately 20.00 m. to the east of the *temenos*, on the south wall of the lower terrace of the Qal'a, a track cut for the approach to a house on the slope below Gate C has exposed a cross-section through the fortifications at a point where the wall stands to a height of 3.70 m. The section was cleaned and drawn, and a sondage 1.50 m. x 1.50 m. dug.

We distinguished four phases:

(i) *Pre-Wall Building*: The exterior wall (1.34 m. wide) of a building had been

used for the inside face of the fortification wall. In this wall a doorway 1.00 m. wide, which was cut by the track, is exposed. The construction is of unmortared rubble with cut stone door-jamb. Outside the door part of a surface of paving-stones and cobbles was preserved under the rubble fill of phase (ii). The style of construction and a few sherds from above the paving suggest a Roman date.

(ii) *Wall Construction*: Width 3.40 m. excluding phase (i).

1. *Foundation*: Only a foundation for the façade was built. This is a free-standing rubble wall 1.42 m. deep, and not more than 2.40 m. wide, packed with dark grey-brown puddled clay. The foundation filled a narrow vertical-sided trench.

2. *Superstructure*: The façade has a base-course of large cut limestone blocks 0.60 m. x 0.60 m. x 1.20 m., and above that a facing, two blocks thick, of dry-laid limestone ashlar averaging 0.34 x 0.34 x 0.70 m. The fill of the wall is of undressed limestone with a greyish brown soil fill, probably the deteriorated remnants of puddled clay similar to the foundation.

3. *Dating*: The pottery of the wash deposits predating the foundation, as excavated in the sondage, resembles closely the *temenos* fills, and may be tentatively dated to the first-second centuries A.D. Following construction of the wall, a dump of pottery and organic materials accumulated against the outside face of the wall. The pottery of this dump is comparable with, or slightly later than, the third century tomb in Amman excavated by Harding, say third/fourth centuries.⁵ As we shall argue later, the construction may well be related to that of the *temenos* in the second century.

(iii) *Refacing*: Following phase (ii) the façade of the wall was cut back down to the third course above the foundation; and a new facade of limestone ashlar pointed with a grey lime plaster added. The new facade does not bond with the old structure. The only evidence for dating is the stylistic similarity of the plastering to other Umayyad work at the Qal'a. However it

³ Dorneman, 1970: 51.

⁴ Zayadine 1975: 12.

⁵ Harding, 1950d

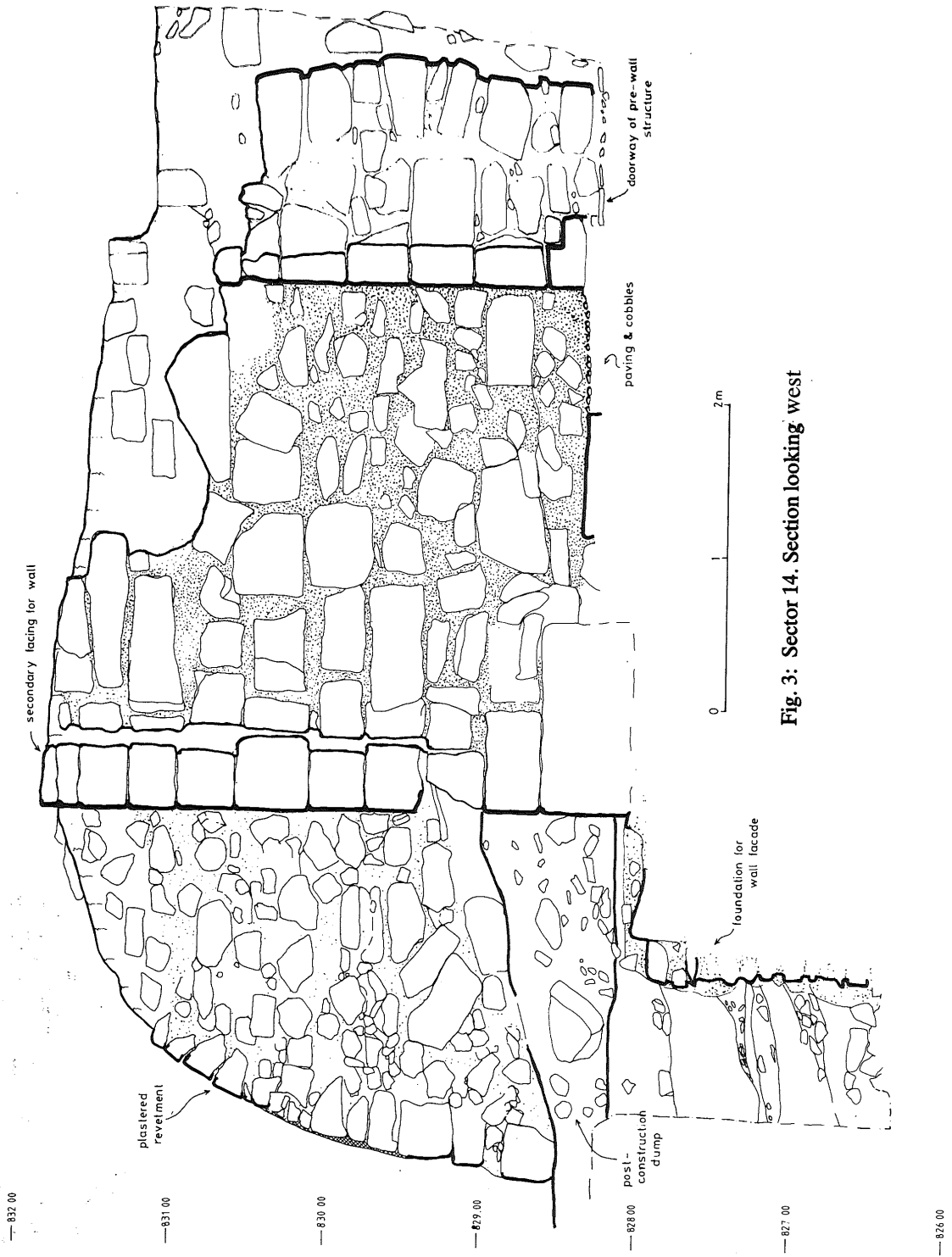


Fig. 3: Sector 14. Section looking west

obviously belongs to the same construction project as the rather better dated refacing of sector 12 in the Umayyad period (on which see below).

(iv) *The Revetment*: Lastly a revetment with a curved sloping façade was added, 2.40 m. wide at its base, and preserved to a height of 2.60 m. The revetment is built of medium rubble and faced with a coating of grey lime plaster, which is inset with lumps of chalk. In Area D a similar section of revetment (of rather smaller dimensions) was shown to postdate damage to the Umayyad wall, and to predate a house built over it in the 'Abbasid period, at a date when splash glaze ware had already been introduced.⁶ The revetment probably belongs to the beginning of the 'Abbasid period, that is, the second half of the second/eighth century.

(2) Sector 25 And Tower G (Figs. 4 and 5)

Tower G was excavated and a sondage dug behind the reentrant in the sector 25 wall. On the south side of the tower a trench had been dug by Dorneman against the face of the wall in the late 1960's to test the theory of Conder that column drums visible in the surface were part of a gate between the upper and lower terraces of the Qal'a.⁷ Dorneman did not find a gate, and the gate between the two terraces has yet to be found.

Sector 25: Sector 25 is built mostly on top of the east wall of the *temenos*, which is visible towards the southern end. However we did not find any trace of the *temenos* wall in the area of Tower G, and we are forced to assume at present that the northeast corner of the *temenos* had been almost totally destroyed before the building of sector 25. The fortification wall is 1.20 m. wide, of reused ashlar laid dry, without any foundation. Its striking feature is the incorporation of seven column drums from the temple of Hercules. Six had been visible on the surface or exca-

vated by Dorneman, and we found a further drum, built into the wall.

Dating: On the dating we reached the same conclusion as Dorneman, namely that Umayyad pottery is found down to the base of the wall. There was no evidence of Byzantine rubbish dumps along the base of the wall, such as were found in sector 14; rather the stratigraphy of the sondage changed straight from Roman deposits into Umayyad. Therefore we thought the wall must be Umayyad in date, although it differs from other Umayyad construction.

Tower G: The tower is a square of 5.80 m. added on the face of sector 25. The north and south walls are 0.90-1.05 m. thick, but the east façade is thickened to 1.30 m. The construction is of cut lime-stone masonry for the facade, and rubble walling for the inside, all mortared with patches of grey lime plaster on the face. There is also a built rubble foundation. In the northeast corner a doorway, opening surprisingly from outside the defended area, leads into an interior room with an earth floor. The springers of an arch across the centre may be reckoned to have supported another floor 2.50-3.00 m. higher. If this floor belonged to a second room which opened onto a rampart walk, then the total height would be approximately 8.50-9.00 m. including parapet.

The internal room was occupied up to the Ayyubid period, indicated by the rim of a large jar of Pseudo-Prehistoric ware,⁸ and a second partition.

Dating: The *terminus post quem* for dating the tower is the Umayyad date of sector 25, and the *terminus ante quem* a dump of Umayyad pottery laid against the north wall of the tower under the doorway and sealed by a later Ayyubid surface. Thus we are limited to an Umayyad construction, or one of the period of the revetment, early in the Abbasid period. Similarity of construction to Tower E⁹ shows that the former choice is the right one; the tower was perhaps added as an

⁶ Bennett, 1979: Appendix B.

⁷ Dorneman, 1970. See also a report in the Registration Centre of the Department of Antiquities in Amman.

⁸ The common handmade painted ware of the Ayyubid-Mamluk period in Jordan is often called

in excavations in Syria, e.g. Qasr al-Hair East, 'Pseudo-Prehistoric' ware. As this seems a singular appropriate name for the pottery, it has been adopted here.

⁹ Bennett, 1979: Appendix B.

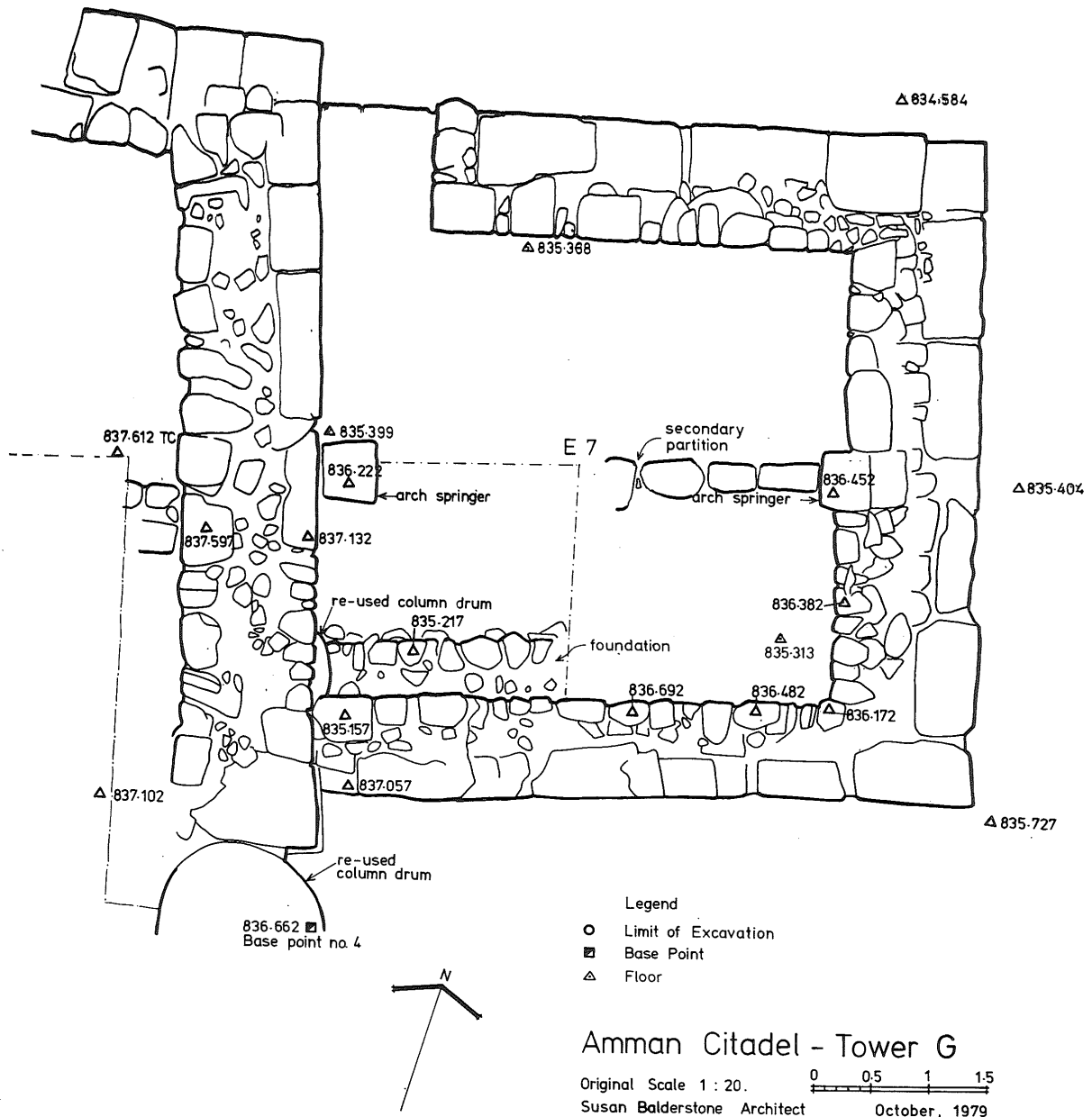


Fig. 4.

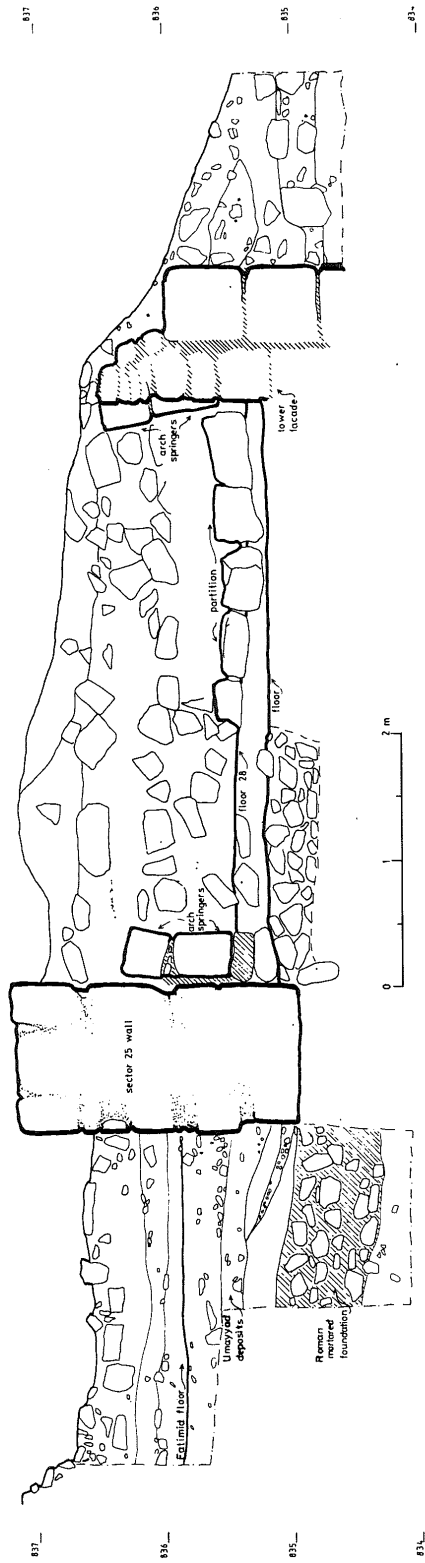


Fig. 5: Tower G, Section looking North.

afterthought to sector 25, from which it differs in construction.

(3) Sectors 11, 12 And Tower B (South Tower (Figs. 6, 7)

The sector 11/12 wall incorporates the south wall of the *temenos*. Traces were uncovered at four places: at its eastern end adjacent to Gate C (Square E5), into square adjacent to Tower B, and at its western end (Square E21). In addition clearance work had been carried out on the outside of the wall line, possible in the 1960's, and we did some cleaning to explain the developing of the façade.

The five phases of construction that were distinguished were:

(i) *Pre-wall*: A number of rubble-built walls at different angles are visible at the base of the clearance. These appear to belong to occupation broadly datable by Square E3 (see below) to the late Hellenistic and Early Roman periods.

(ii) *The Temenos Wall*: Width 3.20 m. Max. Height 2.60 m.

1. Foundations: None of the foundations of the exterior façade survives; the interior is a free-standing rubble wall up to 0.60 m. wider than the superstructure, and 2.40 m. deep. The core is of limestone and flint packed with small stones and brown clay.

2. Superstructure: The inside façade has a base-course of large limestone ash-lars 1.20 x 0.60 x 0.30 m. Above that both façades have smaller limestone ash-lars 0.70 x 0.35 x 0.40 m. two blocks thick. The core is rubble and brown clay.

(iii) *The Fortification Wall*: (Sectors 11/12)

Before the construction of the fortification wall, the *temenos* wall at its western end in E21 (Fig. 6) had been destroyed down to its foundation, with the exception of two blocks. In the other squares the lack of evidence for a foundation of the fortification wall similar to E21 suggests that much of the remainder of the *temenos* wall may still have been standing.

Our evidence for fortification work consists of a new wall at the western and (sector 11), with a foundation of rubble and *terra rossa* 2.50 m. wide, and a

refacing of the *temenos* wall in sector 12.

As in sector 14 the façade was cut back 0.50-0.60 m. Some of the headers of the original façade were cut through, and remain *in situ*. A new rubble-built foundation for the façade was put in, up to 1.20 m. deep. The new façade is largely composed of reused ash-lars, including a number of architectural fragments from the temple of Hercules, and is finished with a pointing of grey lime-plaster. There is no attempt to bond the new facing with the original work, and in places it starts from a lower level than the earlier superstructure.

Three rectangular buttresses were added to the outside face, with average dimensions of 6.08 x 0.52 m., perhaps to strengthen the new façade.

Dating: The continuation of the *terra rossa* and rubble foundation in Gate C is dated to the Umayyad period (see under Gate C).

(iv) *The Revetment*: The western buttress was rebuilt. Only the core of rubble and *terra rossa* survives, but it no doubt supported a sloping façade (cf. sector 14).

(v) *Tower B (South Tower) (Fig. 7)*

By the time Tower B was built the combination *temenos* fortification wall had collapsed down to its present height; Tower B is founded upon, but does not take account of the earlier phases.

The tower is rectangular, 7.60 x 9.30 m., set slightly askew to the sector 12 wall, from which it projects. A door in the north wall leads to a single interior room, 3.10 x 4.80 m. A staircase in the thickness of the north wall leads to the roof. There is a single arrow slit in each of the west, south and east faces, and these are set into rectangular recesses. The arrow slits have flat tops, but any arch over the recesses has disappeared.

The south façade still appears to stand to its original height of 8.10 m. and rests on a line of column drums, which in turn rest upon bedrock. The north wall is no longer complete, especially in the area of the doorway. However in 1881 the Palestine Exploration Fund survey, headed by C. R. Conder, found the tower complete: the door had a flat lintel with a *tabula ansata* in relief, and a segmental relieving

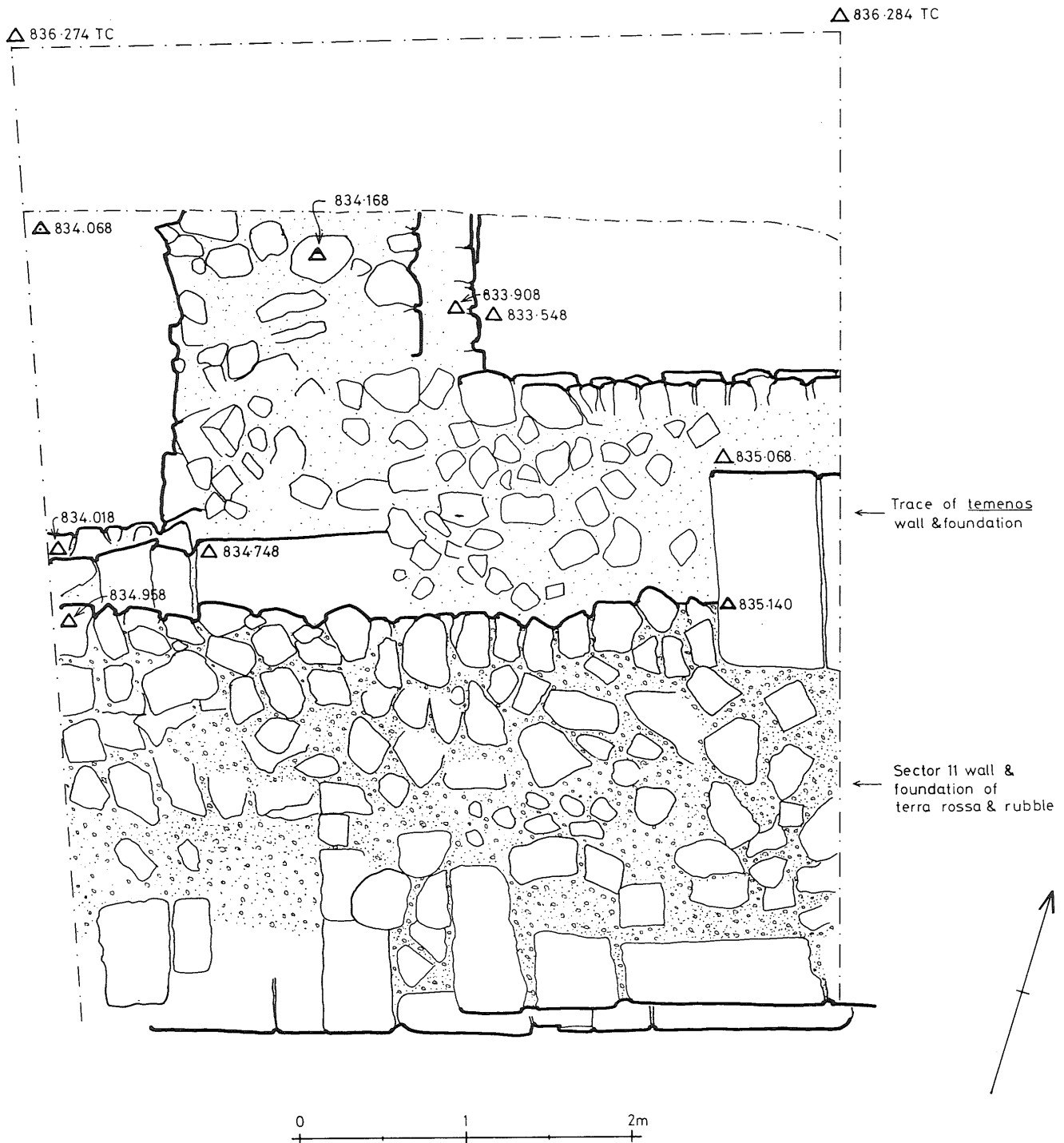
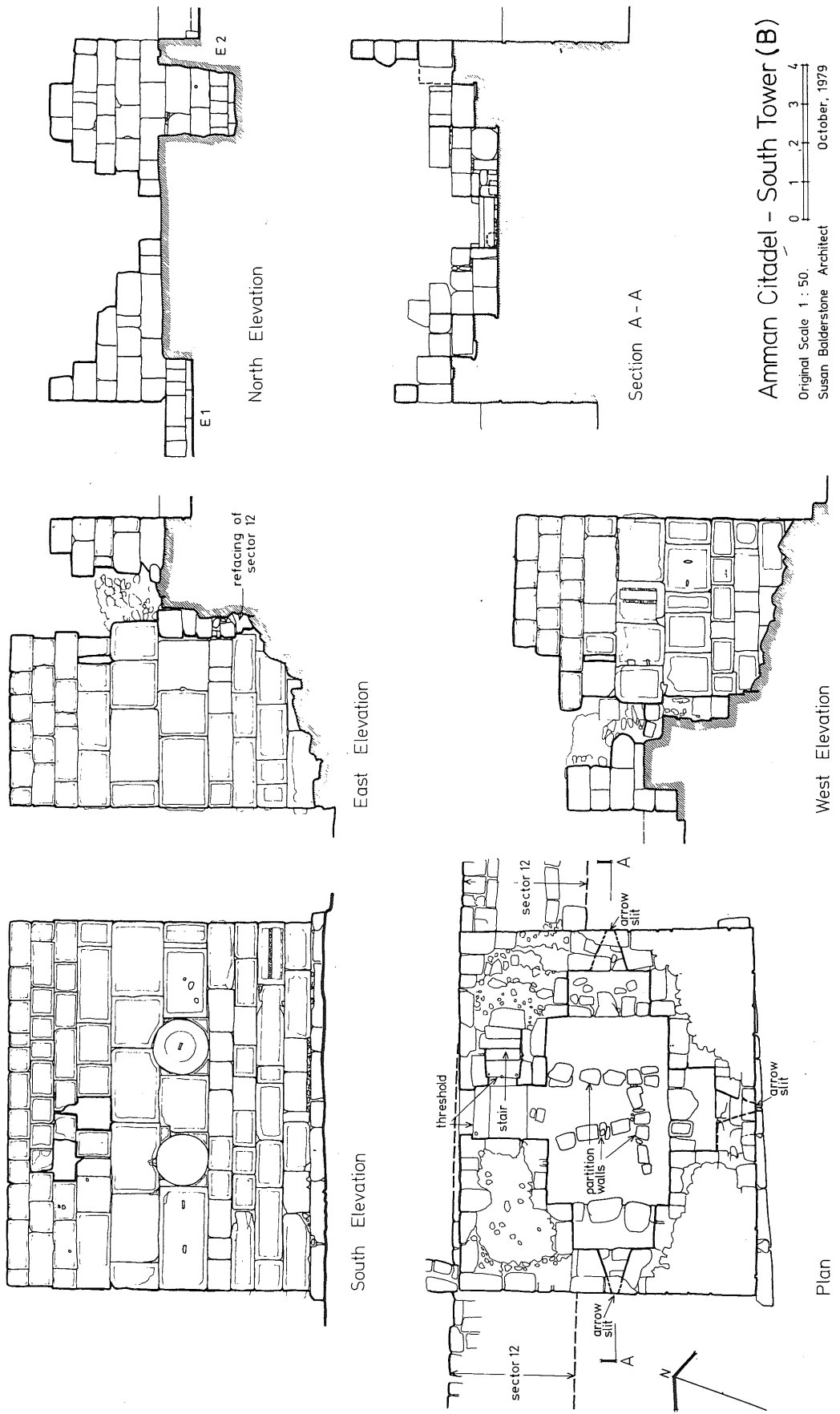


Fig. 6: Sector II, Wall overlying the South-west corner of the Temenos (E21)



Amman Citadel - South Tower (B)

Original Scale 1 : 50.
 Susan Balderstone Architect
 October, 1979

Fig. 7

arch of five voussoirs.¹⁰ The interior room seems to have been vaulted.¹¹

Construction is of limestone ashlar, of varying dimensions, but with two courses of 1.25 m., the largest block measuring 2.70 x 1.25 x 0.70 m. Many of the stones on the south, west and east faces have narrow drafted margins, while the interior and north walls have plain dressed masonry. There are eleven Roman architectural fragments, many of which have been recut. The south façade has two column drums from the temple, placed symmetrically. These are wedged in position with triangular blocks, purpose cut with drafted margins.

Dating: An Ayyubid bronze of Damascus was found in an ash patch overlying the rocky and uneven floor of the interior. As the ash could not have been deposited long after the construction of the tower this provides us with a *terminus post* of the late sixth/twelfth century or early seventh/thirteenth century. We have no clear *terminus ante*; nevertheless the large size of the masonry makes it unlikely that the tower is late Mamluk or Ottoman.

Rather, we suggest that it is in fact Ayyubid. The arrow slits and their recesses resemble the first period at Qal'at ar-Rabad, 'Ajlun.¹² The drafted masonry, with a narrow draft and a large flat boss, was popular at about the beginning of the seventh/thirteenth century, and is found in datable structures at Pilgrims Castle, Athlit (*ca.* 1218)¹³ Ba'albak (Ayyubid),¹⁴ and as far afield as the castle of Anavarza in Cilicia (*ca.* 1189).¹⁵ The squat, square proportions of the tower might be a smaller version of the towers of the citadel at Busra, built under al-'Adil between 599/1202 and 615/1218-9, and added to under as-Salih in 647/1249-50.¹⁶ The tower might also be related to Ayyubid occupation at the Qal'a.¹⁷

(4) Gate C (Figs. 8-10)

The gate is located at the southeast corner of the *temenos*, and from it the ground falls away steeply to the lower city. Our work on the gate consisted of the excavation of the gate itself and the southeast corner of the *temenos*, a sondage outside (E3) and inside (E5) the *temenos* wall line.

Seven constructional periods were seen in the area of the gate, including deposits that predated and postdated the gate itself:

(i) *Pre-Gate Occupation (E3)*: A sondage measuring 3.50 x 6.00 m. outside the wall line. The surface had already been cleared of deposits down to the foundation level of the *temenos* wall. The sondage revealed a structure with four surfaces. The second of these produced a Nabataean bronze coin of Aretas and Shaqilat (9 B.C.-40 A.D.). It seems likely therefore that the later parts of this sequence belong to the first century A.D., and the earlier parts possibly also to the first century B.C. In the northwest corner the structure was overlaid by a further wall that predated that *temenos* wall.

(ii) *Plastered Wall Building*: Gate C was mounted directly on top of an earlier structure, which it used as a foundation. This was apparently a rectangle measuring 13.30 x 13.60 x 16.00 m. (the north wall was not found), built partly of rubble and partly of cut limestone. It was plastered with a white lime plaster. We understood it to be a platform, but we did not find conclusive evidence of its purpose. It is possible that it was an earlier version of Gate C, or that it was the podium of a small temple. At a later date a buttress was added to the west wall, possibly as part of the foundations of Gate C, and this post-dated the abandonment of the E3 sequence. While the buttress prevented conclu-

¹⁰ Conder, 1889: 33-4. The tower is attributed by Conder to the Byzantine period on the basis of the *tabula ansata*.

¹¹ The tower appears in the background of photographs nos. 546 and 548, taken in 1881 and 1882 respectively, in the archives of the Palestine Exploration Fund.

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¹³ Johns, 1931.

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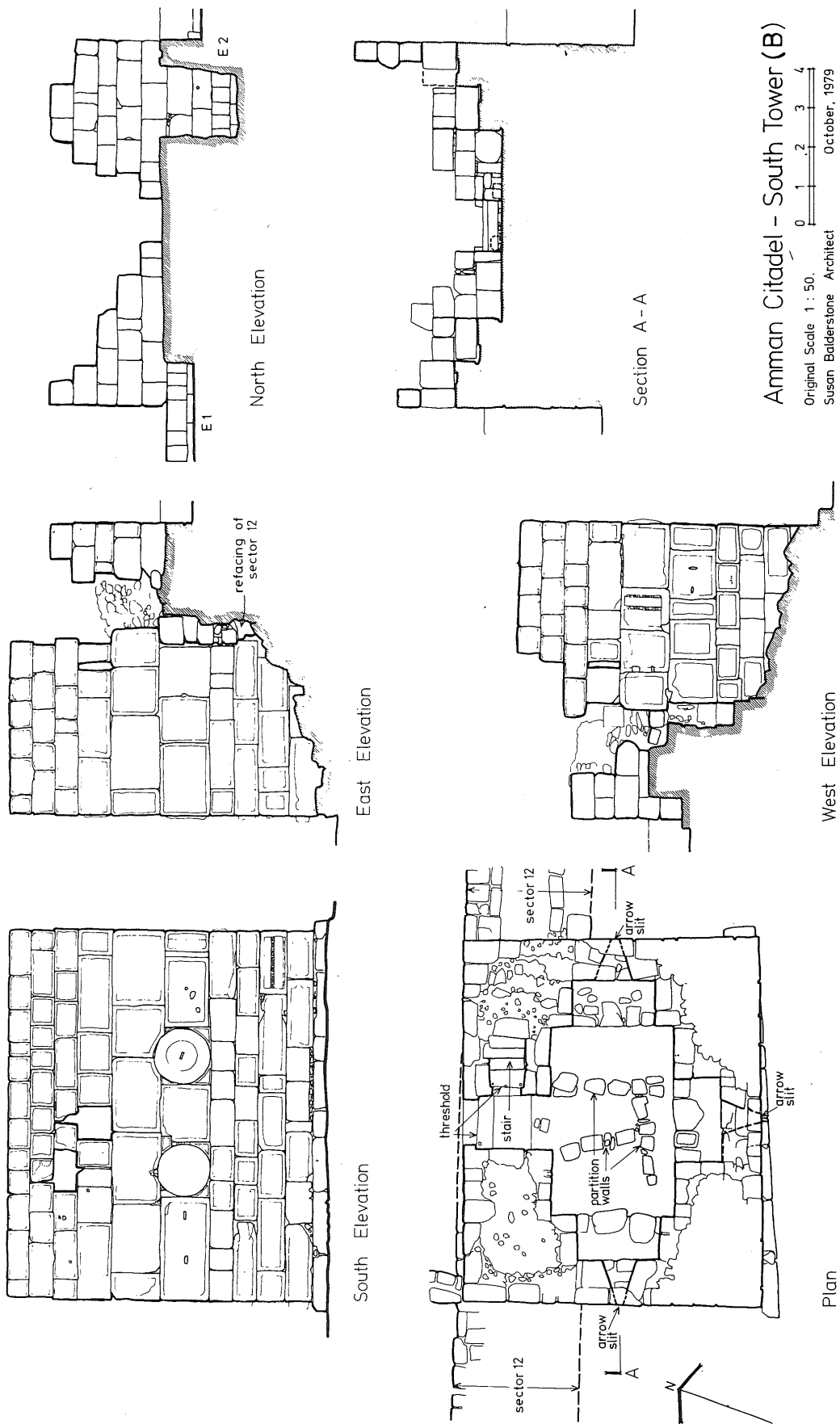
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Amman Citadel - South Tower (B)

Original Scale 1 : 50.
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 October, 1979

Fig. 7

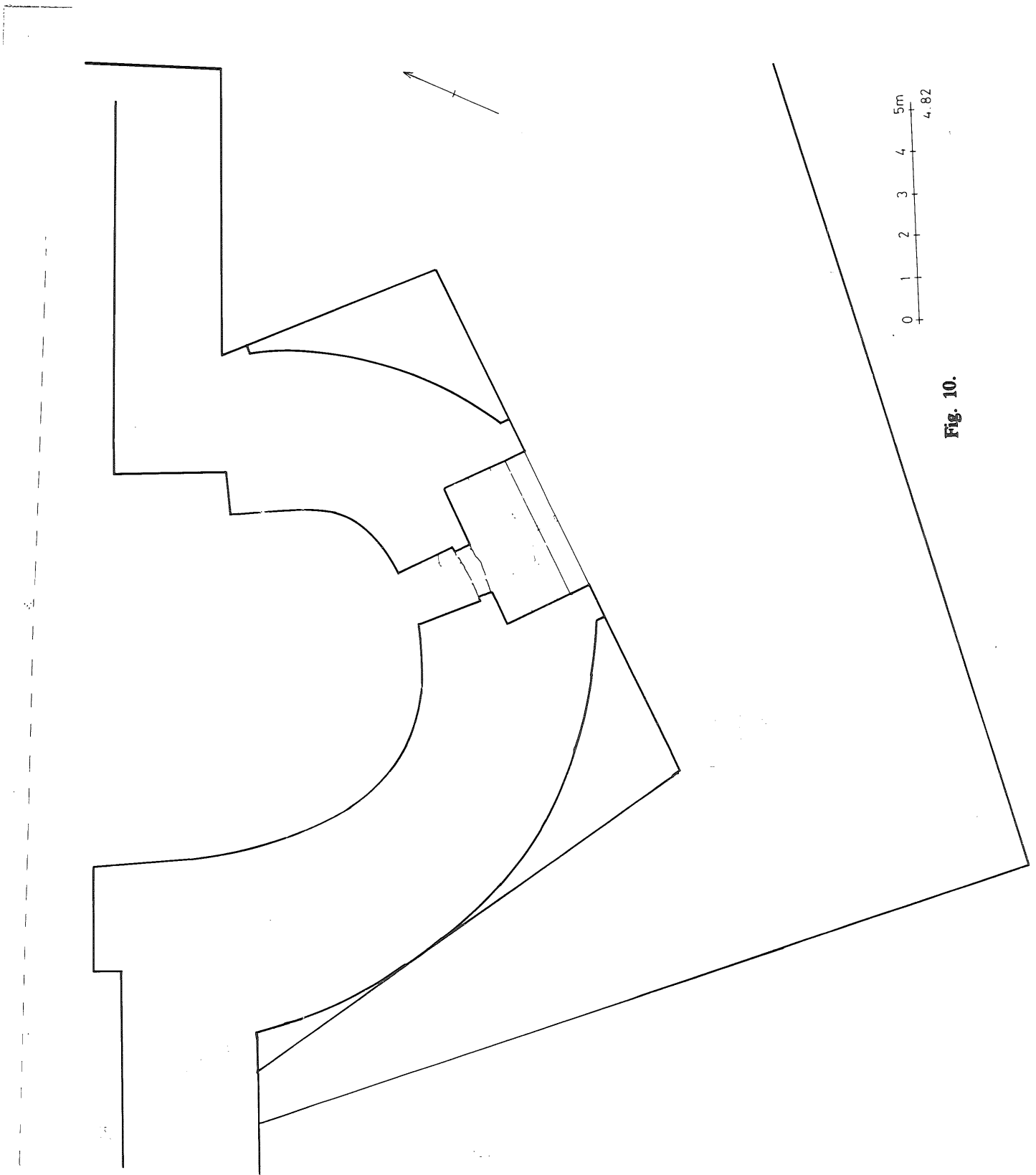


Fig. 10.

sive dating of the plastered wall building, it was evident that the building was either contemporary with or postdated the E3 sequence, and therefore is probably datable to the first century A.D.

(iii) *Construction of Gate C* (Figs. 8, 9)

The gate survives only to the ground level course, and the surface of the stylobate. On the west and south sides remains outside the line of the plastered wall platform have been denuded. The exception is a corner of masonry visible below the southwest corner of the gate (sector 13). While because of the difficulties of excavation,¹⁸ it was not possible to prove that this wall was contemporary with the gate (it may be later), some sort of structure on this line would have been necessary to support a landing outside the gate.

The gate consists of a rectangular exterior set at an angle of 55° to the line of the *temenos* wall, with which it is contemporary. There is a threshold 4.10 m. wide with six bolt holes. The interior is semi-circular, and leads up to a stylobate.

Traces of a paving of cut limestone and cobbles were found adjacent to the threshold. However, over most of the area we found surfacings of *huwwar* (chalk gravel), and mounds of *huwwar* over the latest surface, perhaps prepared for laying, but never used. A curious feature was the provision of two blocks of limestone for a rough step up onto the stylobate.

On the east side a second smaller threshold opens into a side room with an earth floor firmed up with cobbles. The outer line of the room has been eroded; presumably it continued the facade of the gate to join the east wall of the *temenos*.

The Architectural Form of Gate C: (Fig. 9): The rectangular exterior and semi-circular interior of the gate is unusual, but we have no direct evidence of the superstructure other than this. However the curved foundation of phase (v) (see below) implies that the rectangular exterior may have been the plinth for a semi-circular superstructure. For if the

exterior had been rectangular such a curved strengthening wall would not have been appropriate: rather an attempt would have been made to restore the gate in a rectangular form. In any case, a rectangular plinth was forced upon the builders by the rectangular shape of the "plastered wall" building underneath. We concluded therefore that the original form of the structure had probably been semi-circular, resting on a rectangular plinth.

On the inside of the gate, the reconstruction of the stylobate can be derived from traces of wear, and chisel marks for fitting structures onto the flat surface. There is the mark of one column base 1.05 m. square; a second matching column could have sat on a section which was robbed out. The side walls projected 1.15 and 1.60 m. respectively over the surface, presumably for pilasters.

Tiling recovered from the gate area suggested that the semi-circular area had originally had a beam and tile roof. Although there was a possibility that the tile roof had been limited to the side room, the two-column portico told us that the whole was roofed, and the tiles gave us the most likely evidence of how it had been done.

There should have been a landing outside the gate. As the masonry outside the line of the threshold has disappeared, we thought at first that the landing, and stairway or ramp that approached the gate, had been cut away deliberately. However it was equally possible that a collapse could remove any construction not securely mounted on the "plastered wall" platform. In either case the landing should have been supported by a wall on the line of the sector 13 wall, or that wall itself.

While the evidence does not exclude the possibility of a straight monumental stairway down to the lower town, the overall gradient of 39% would have been a difficult climb. The line of sector 13 diverges from the facade of the gate, and would permit a stairway 6.00 m. wide to lead down to the east from the landing. If

¹⁸ At the time of writing the slope is in a dangerous condition, with a surface containing quantities of building masonry eroded from the Qal'a.

Excavation of the 'landing' base (sector 13) was decided against on the grounds of danger to inhabited houses below.

this was the case, then a winding stair led down to the lower city. A possible line is shown in Fig. 11, but no trace of either a winding stair or a straight staircase is visible in the surface of the slope. Our suggestion is based on the modern staircases and alleyways that wind up the slopes of Jabal al-Qal'a.

To summarise, the gate thus had apparently a portico with a pair of columns on the inside line, and a semi-circular exterior set on a rectangular plinth with a single 4.10 m. passageway. This opened onto a landing with a stairway leading down initially to the east, and then twisting down the slope.

Dating: Excavation inside the *temenos* wall (square E5) penetrated the fills that backed the south wall of the *temenos* and Gate C itself. These earth fills were homogeneous and apparently constituted the levelling fill of the *temenos* courtyard. This levelling fill was put in after the building of the *temenos* wall and gate. The gate and *temenos* are thus contemporary. Dorneman, in an unpublished excavation on the site of the steps of the Temple of Hercules, encountered a jumbled fill of earth and limestone masonry, also representing the levelling fill of the courtyard. Bartoccini, in excavating the Temple found the limestone bedrock of the hill immediately under the base of the *podium*. At the moment we do not have conclusive evidence that the *temenos* was built for the present temple, and is thus contemporary with it (A.D. 161-180), but it seems very probable.

(iv) *Secondary Events:*

A floor deposit of sherds in the side room indicated an abandonment possibly in the third or fourth century. Part of the top course of the stylobate was also robbed out: the consequent robber trench contained the sherds of two Late Byzantine ribbed cooking pots. While these two pieces of evidence suggest the termination of maintenance in the Byzantine period, passage up the stairway

and through the gate may well have continued.

(v) *Rebuild of the Gate* (Fig. 10):

As the superstructure of the gate has disappeared, there is now only a little evidence for the reconstruction of the gate in its later days. That evidence is a curved foundation of medium rubble and *terra rossa*, 2.50 m. wide and surviving up to 1.00 m. deep, following the line of the wall on the west side, and in part on the east. In all probability the walls of Gate C were still standing, and the foundation was for a 2.50 m. wall intended to strengthen them.

A secondary threshold behind the main Roman threshold may also belong to this period. Although it lacked a provable relationship with the foundation because of denudation of the deposits, it is well-placed to be linked with it.

The form of the gate therefore we suggest changed from an enclosed gate with a 4.00 m. passageway to an open semi-circular bastion with a small postern gate.

Dating: Umayyad, from sherds of red-painted ware in the foundation.

(vi) *The Revetment:* The sloping revetment (cf. sector 14) was added to the outside of the 'landing' wall (sector 13), visible on two sides in the southwest corner. An additional section runs from the southeast corner of the gate; this revets not a wall, but a mass of rubble. By this period the gate may have been entirely blocked off.

(vii) *Later Construction:* A wall overlying the east end of the stylobate, and a threshold.

Discussion

The *Temenos* of the Temple of Hercules

The temple, dated to the reign of Marcus Aurelius (A.D. 161-180) by an inscription,¹⁹ has been studied and excavated several times,²⁰ but little attempt has been made to assess its *temnos* and approaches. In 1981 we replanned the

¹⁹ Littmann, et al., 1921: insc. 4, the dedication inscription from the Temple of Hercules, refers definitely to Marcus Aurelius (A.D. 161-180), but the authors also suggest that it refers to the co-emperorship of Marcus Aurelius and Lucius Verus, between 161 and 169.

²⁰ Conder, 1889: 31-3; Butler, 1919: 38-41; Excavations of the Italian Archaeological Mission 1927-38, reported in Bartoccini, 1938; Joint Expedition of the University of Jordan, American Center of Oriental Research, and Department of Antiquities, 1969, Dr. R. Dorneman (Unpub.)

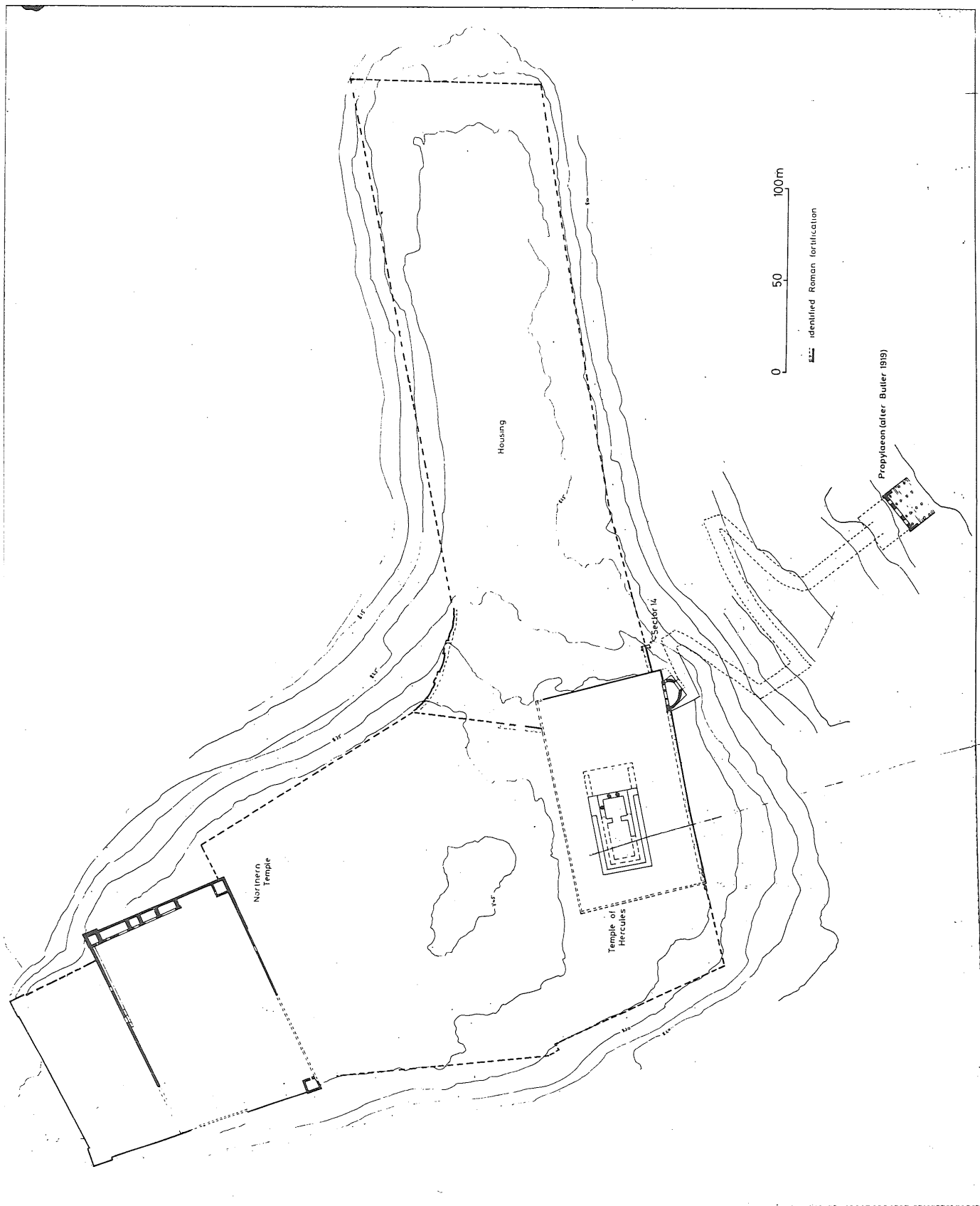


Fig. 11.

temple (Fig. 12) and drew up the architectural details, in addition to the excavations described earlier.

From air photographs the flat terrace of the *temenos* can be seen clearly, raised above the lower Qal'a. The *temenos* was rectangular, as far as can be judged. The southeast and probably the southwest corners have been located, to give a length of 119.00 m.²¹ The temple itself, with a surviving podium base measuring 43.50 x 27.5 m., is set, as is to be expected, at the west end of the *temenos* facing east. Its centre line is also offset to the north from a symmetrical position by 8.00 m. A section of stylobate for the colonnade was discovered some years ago in the northwest corner of the *temenos*.

Gate C appears to have been the principal gate, but there may have been a second gate opposite on the north side for access to the Northern Temple. Gate C was approached from the lower town. Butler identified a ruin below Gate C as a Propylaeon, and compared it to the Propylaeon at Jerash.²² Although the building is now long gone, we have a survey by Butler, and photographs. There is little doubt that Butler's identification was correct, but his proposal that the Propylaeon and Gate C were linked by a straight monumental stairway, perhaps similar to the approach to the Temple of Artemis at Jerash, underestimates the difficulties of the slope. That difficult and the arrangement of the 'landing' wall outside the gate suggest rather that there was a winding stair that fitted the contours of the hill.

Development of the Fortifications

In the course of the excavations we have so far identified four different periods of work on the fortifications of the

Qal'a:

1) Roman Wall:

A Roman wall, identified in sector 14. Note also that the wide south wall of the *temenos* (3.20 m.), and the single passageway of Gate C appear to have been designed as part of a fortification system. By contrast sector 1, 0.90 m. wide, part of the *temenos* wall of the northern Temple, ought to have been similarly designed, as it faces away from the city, but it was not.²³ While not closely dated, the Northern Temple should belong to either the first or second centuries A.D., more probably the latter. The Northern Temple then predates the Temple of Hercules, and the Roman fortifications must have been built either between the construction of the two temples, or in the same project as the temple of Hercules, and finished between A.D. 161 and 180, or slightly later. Of the two we prefer the latter hypothesis: the foundation work, sizes and styles of the masonry of the sector 14 wall are almost identical to the south wall of the *temenos* (Sector 12).²⁴

2) An Umayyad Wall:

We have not yet found any conclusive evidence of wall construction in the Byzantine period.²⁵ It is evident that by the time of period (2) the Roman wall was in a ruinous state, but the date or cause of its collapse is not clear.

Period (2) marked a major reconstruction of the defences. The work included both new construction, and refacing of standing sections of the old wall. The pattern of the walling appears to be a 2.50 m. or a 4.00 m. wall with shallow rectangular buttresses. The buttresses appear to have been added to strengthen areas where only a new façade was put on. The square towers were into the thickness

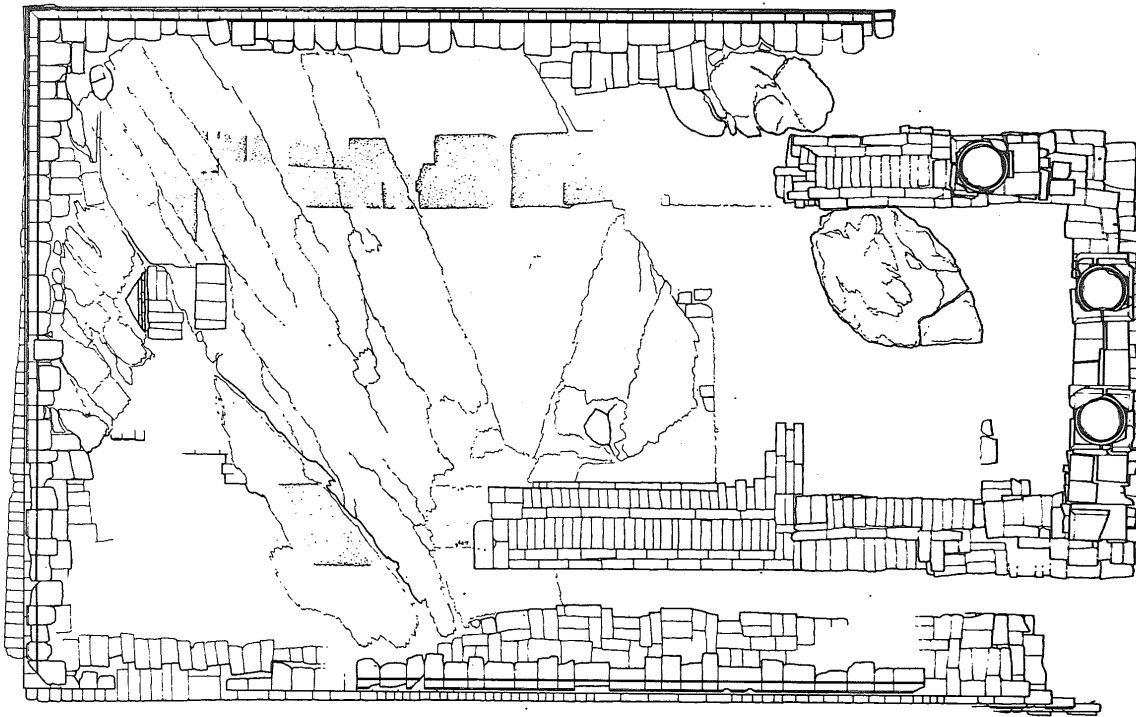
²¹ Sector 26 of the fortifications may be Roman in date, from its width of 3.20 m., and have abutted the *temenos* wall originally. The curious dog-leg in the wall at this point may represent an attempt to join the Umayyad sector 25 with the Roman sector 26, after the northeast corner of the *temenos* had collapsed. An earlier suggestion, that the dog-leg was the site of a gate, was disproved in 1981.

²² Butler, 1919: 43-6.

²³ Northedge, 1980: 141.

²⁴ The width of sectors 12 and 14 is not the same; possibly because of the earlier wall incorporated (sector 12: *temenos*, 3.20 m.; sector 14: 3.40+1.34 m.). However two other sectors, 22, which has evidence of refacing, and 26 are 3.20 m. in width, and probably Roman. The Umayyad wall is 2.50 or 4.00 m. wide (except sector 25).

²⁵ Dr. Fawzi Zayadine informs me that he dates a part of sector 23, excavated in Area A, to the 6th century A.D. I am indebted to him for this information.



PHILADELPHIA THE TEMPLE OF HERCULES

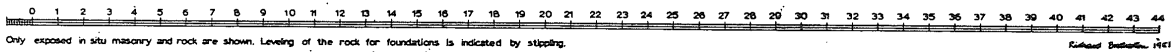


Fig. 12.

of the wall, with only a limited projection. Tower G is an exception, because it was an addition.

Of the sectors of wall described two, sector 25 and Gate C, have evidence that this work is to be dated to the Umayyad period. Elsewhere, in Area C, the construction of sector 8 was also dated to the Umayyad period.²⁶ With the exception of Tower B, the towers whose dates are known belong to the Umayyad period, that is, Tower A²⁷, Tower E²⁸ and Tower G.

Tower A gives us the closest dating: it is bonded with the palace, and thus may be dated by it, i.e., to the late Umayyad period (105/724 - 126/744).²⁹ Indeed it is most likely that Umayyad construction in the fortifications would belong to the same project as the palace, for the Umayyad period is a very short one. The implication of this, of course, is that much of the Umayyad occupation of the Qal'a represents a single architectural development — an Umayyad fortress or citadel (presented in Fig. 13), and we hope to explore this idea further in the future.

3) Restoration:

Traces of the revetment, and the rebuilding of buttresses with sloping facades, are visible at many points around the walls (Sectors 5, 8, 9, 12, 13, 14, 20, 22, 23). However the only point apparently where the revetment is overlaid by later construction is adjacent to Tower E in Area D: the first buttress in sector 9 was rebuilt with a sloping façade to cover an apparent collapse; and tower, wall and

revetment had been covered by a house built in the 'Abbasid period.³⁰ Thus the revetment and rebuilding of buttresses should be a response to damage to the Umayyad wall. It is likely that the damage stemmed from the earthquake of 130/747,³¹ and the revetment is an early 'Abbasid restoration. The same evidence also tells us that the fortifications collapsed in the 'Abbasid period, perhaps in the third/ninth or fourth/tenth centuries.

4) Tower B (South Tower):

Tower B is a solitary addition to the Qal'a, of the Ayyubid period. As such it must have been a watch-tower to oversee the town. If our dating of the first half of the seventh/thirteenth century is correct, one might link the construction of the tower with the period of castle building that followed the battle of Hattin (583/1187). We may note the castles at Azraq, Qal'at as-Salt, 'Ajlun and Busra. It is surely significant for the Islamic history of Amman that only a watch-tower was built on a site that would have been ideal for a castle.

This fortification sequence has two new items for Jordan: firstly an Umayyad fortification wall. While the design is obviously related to Roman-Byzantine fortification, it is different from other Umayyad work, for example the square for plan with half-round towers. So far we know of only one parallel: Anavarza (Ar. 'Ain Zarba) in Cilicia is perhaps the best preserved of the cities of the *thughur*, the Early Islamic frontier against Byzantium. Two Early Islamic wall lines have been

²⁶ Bennett & Northedge, 1977.

²⁷ Briefly described in Northedge, 1980: 140 as Room SE. This structure, 8.10 m. square, in the southeast corner of the *temenos* of the Northern Temple, appears to be a complex rebuild of a Roman room into a later tower, with the lower part of the tower filled up, and a new floor inserted 3.00 m. higher. The rebuild bonds with the palace.

²⁸ Bennett, 1979: Appendix B.

²⁹ Northedge, 1979.

³⁰ Bennett, 1979: Appendix B.

³¹ Two Umayyad houses have been excavated, which collapsed on their contents (Harding, 1951; Bennett & Northedge, 1977). In the house excavated by Mrs. Bennett the skeleton of an individual apparently killed by the collapse was found. Our reasons for suggesting that the cause

was the earthquake of 130/747 are (1) that the Umayyad construction at the Qal'a belongs to the end of the Umayyad period, that is, to the reigns of Hisham b. 'Abd il-Malik (105/724 - 125/743) or al-Walid b. Yazid (126/744); (2) doubts about the sources for Creswell's sequencing of the Aqsa Mosque (1940: 120), which appear to suggest more than one severe earthquake in the middle of the 2nd/8th century. Conflicts between Hamilton's archaeological sequencing (Hamilton, 1942), and the textual sources of Creswell's work cast doubts upon the idea that there was more than one earthquake of severe proportions. (3) the archaeological evidence that has recently emerged of the 130/747 earthquake, e.g. at Pella (McNicoll, et al. 1982).

³² Hellenkemper, 1976: 380.

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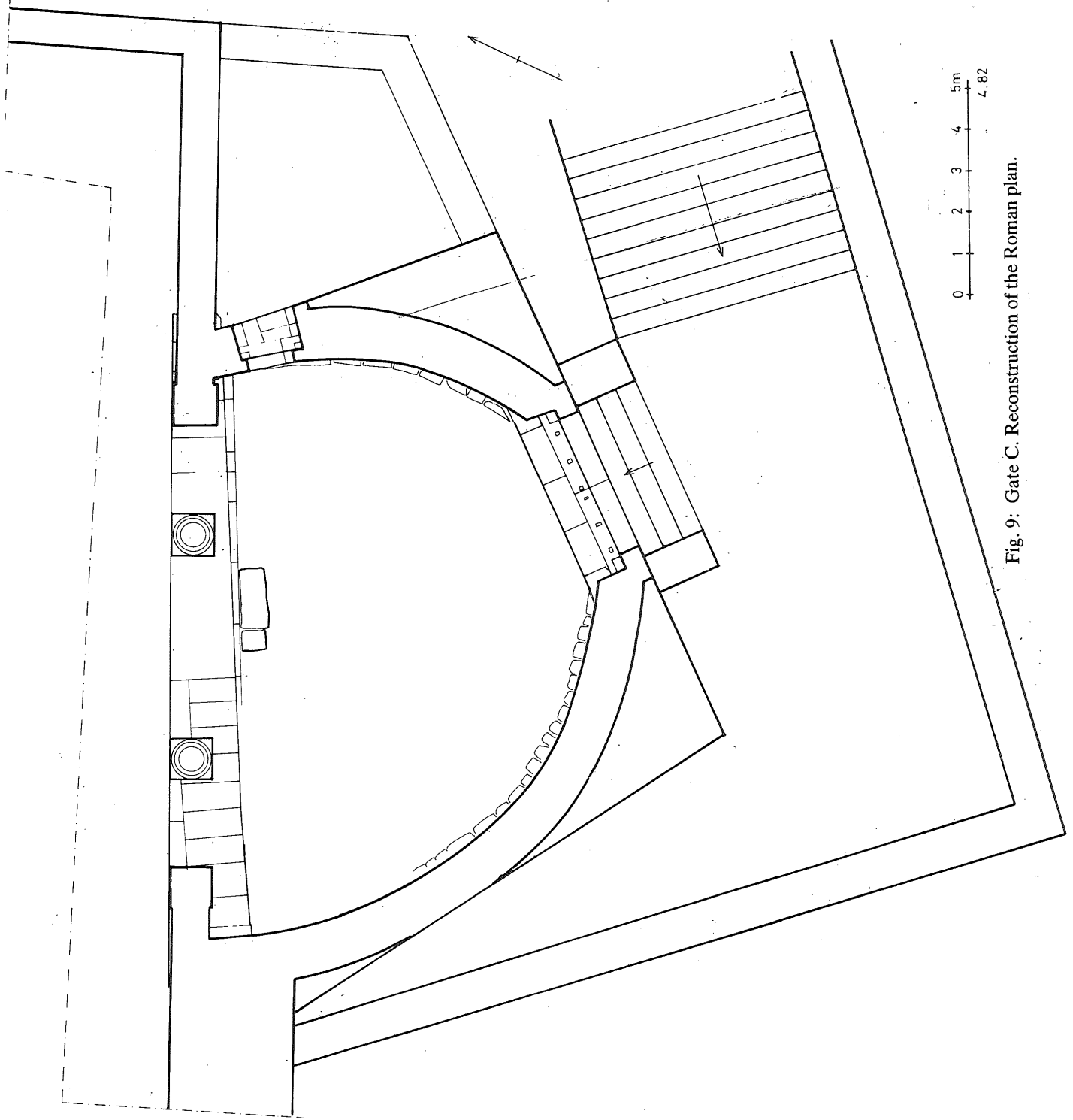


Fig. 9: Gate C. Reconstruction of the Roman plan.

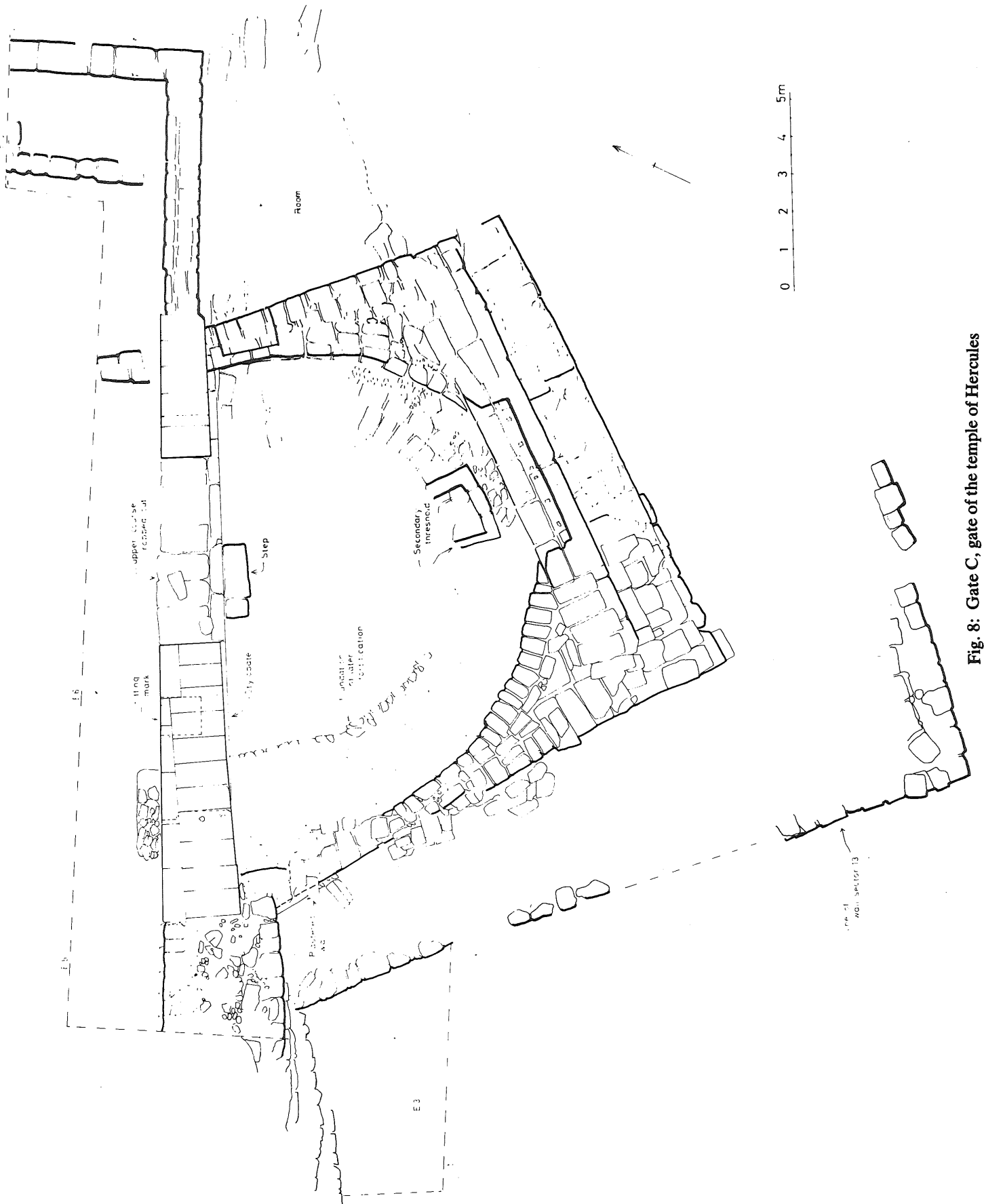


Fig. 8: Gate C, gate of the temple of Hercules