

FROM 'GUARD HOUSE' TO CONGREGATIONAL MOSQUE: RECENT DISCOVERIES ON THE URBAN HISTORY OF ISLAMIC JARASH

Hugh Barnes, Louise Blanke, Kristoffer Damgaard, Ian Simpson, Mette Low Sørensen and Alan Walmsley

Introduction (AW)

The large Umayyad-period congregational mosque at Jarash, first definitively identified by excavation in the summer of 2002, seriously questions the way past scholarship has interpreted the structure and role of towns in Early Islamic Bilād ash-Shām. Often erroneously regarded as insignificant when compared with their predecessors dating to the age of Roman (1st-3rd centuries AD) and Byzantine (4th-6th centuries AD) control, the recent work at Jarash – when combined with other recent discoveries at other sites such as Pella, 'Ammān and Mādabā – now demonstrates conclusively that the early Islamic towns of Jordan prospered as social, political and economic centres of regional importance, and served a crucial role in the maintenance of administrative systems under Umayyad hegemony. Cognizant of the implications resulting from the identification of a large mosque, the Islamic Jarash Project seeks to document the Islamic heritage of Jarash in the widest terms – archaeologically, architecturally, numismatically, culturally and politically – in close collaboration with the Department of Antiquities of Jordan. We especially thank HE Dr. Fawwaz al-Khraysheh, Director-General of the Department of Antiquities, and our three DoA representatives to date: Mrs. Samia Khouri (2002), Dr. Rafe Harahesheh (2003, 2004 – second session) and Mr. Abdul Raheem Hazeem (2004 – first session), and the invaluable help of Mr. Abdul Majid Mejali who willingly offered logistical and technical support. Thanks also to the staff at CBRL 'Ammān for further logistic support and equipment, the German Protestant Institute, and last – but certainly not least – HE Mr. Tawfiq Kawar, the Danish Honorary Consul General in 'Ammān.

The Islamic Jarash Project is sponsored by the University of Copenhagen as a summer school for students of Near Eastern Archaeology enrolled at the Carsten Niebuhr Institute. Additional support is provided by The David Foundation and Collection, Copenhagen, and the Department of Antiquities of Jordan. The team numbers annually around 40, made up of student participants, senior staff (co-authors of this report and, additionally, Aiysha Abu-Laban, Mette Bach, Andreas Bech, Ole Herslund, David Jakobsen, Bente Markussen, Anje Olsen, Lasse Outzen, Emmelie Svenssen, Peter Wandel, Alex Wasse and Kate Wolrige), departmental representatives (named above) and a professional core of surveyor (Mikala Mortensen, 2002; Hugh Barnes, 2004), conservator (Louise Westergaard, 2002; Helle Strehle, Moesgaard Museum, 2004) draftsman (Judith Sellers, 2004) and photographer (Line Thorup, 2004).

Background (AW)

The discovery at Jarash of a sizable Friday mosque belonging to the standard early 'court-yard' ('Arab') style shows that the Roman and early Christian town was also a primary Islamic centre and hence, in addition to the mosque, other important buildings can be expected. The shortage of reliable data and the misleading conclusions deduced from earlier, erratic, archaeological discoveries have created a generally negative impression of urban life at Jarash in the early Islamic period. For instance, the highly respected historian Hugh Kennedy describes the civic standing of Islamic Jarash thus, in the widely circulated and well regarded reference volume *Late Antiquity: a guide to the postclassical world* (Bowersock *et al.* 1999):

'The mosque at Jarash (Gerasa), a town of

some prosperity in the Muslim Umayyad period, was little more than a large room with a mihrāb in the shadow of the giant remains of antiquity and large numbers of Christian churches'. (Kennedy 1999: 229)

In this passage, Kennedy is referring to a very small, mosque-like structure located north of the Artemis Propylaeum and to the east of the cardo. Excavated in 1981 (Naghawi 1982), there is doubt if the structure ever was a mosque, and if it was it probably dated to later times. It needs to be noted that Kennedy is rare amongst historians of Islam because he eagerly uses archaeological data in his studies, but must rely on archaeologists for the accuracy of their material; regrettably, it is often the shortfall in his sources that leads to the type of understatement quoted above.

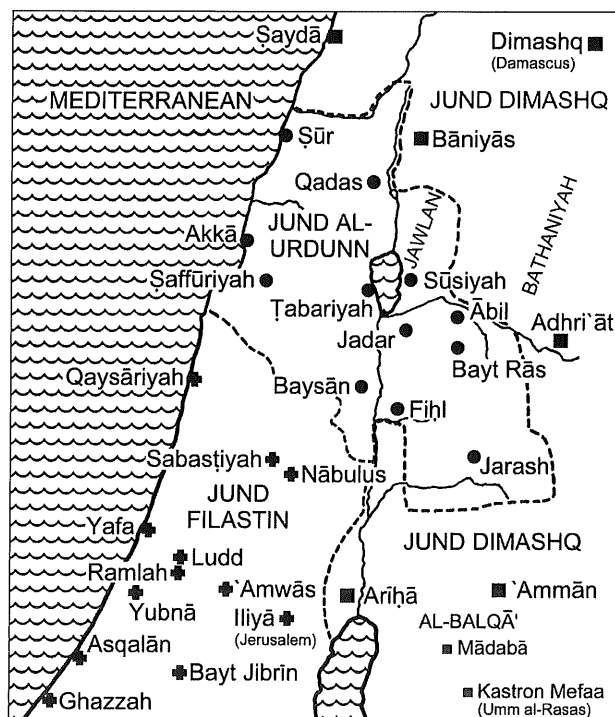
Other writers have similarly opted for a minimalist view of Jarash as an urban centre during the late antique – early Islamic transition. To W. Liebeschuetz, Jarash's urban tone as a post-classical town was simple functionality: 'the city had gradually become more utilitarian in appearance, and it continued to evolve in the same direction', so – not surprisingly – only a 'small' mosque was built (Liebeschuetz 2000: 47-50, 56). A. Northedge was likewise convinced of Jarash's social and economic irrelevance as an early Islamic centre, barely equipped with the most basic of mosques and with a small Muslim population at most.

The evidence of the excavations at Jarash and Pella, or Baysan on the West Bank ... has shown considerable continued small-scale construction and many finds under the Umayyads, but little monumental construction and no large mosques. The picture reflects the accounts in the historical sources of heavy taxation, and probably demonstrates that these cities remained largely non-Muslim until their abandonment (Northedge 1999: 1083-85).

How reliable is this image of a diminutive Jarash in the Umayyad period? At issue, in general terms, is the accuracy of current interpretations of urban life in early Islamic Bilād ash-Shām, and specifically the situation at Jarash. Was it a town of just 'some prosperity', or were conditions better (or maybe worse) than that? Was the urban expression of a new Islamic presence at Jarash solely to be found in little more than

a few shuffled Roman-period stones? These are the sort of questions currently being addressed through a program of research and excavation by the Islamic Jarash Project (IJP).

Why should have Jarash been equipped with a Friday mosque in the Umayyad period? We know from a selection of third/ninth century Arabic sources on the geography and history of Bilād ash-Shām that Jarash was a district capital within the Jund al-Urdunn (Fig. 1), occupying the south-east corner of the province and strategically positioned between the agricultural riches of the 'Ajlūn highlands to the west and the pastoral potential of the Jordanian bādiya to the east. In the Umayyad period the town acquired sufficient administrative importance to mint both pre-reform (Justin II and Sophia type only) and post-reform coins, closely matching in style the more prolific mint of Baysan, seemingly Jarash's 'sister city' (Album and Goodwin 2002: 82, 84-85, 89-90; Naghawi 1989). In addition to the written and numismatic sources, excavations over the last 75 years at many different places within the antiquities site have revealed evidence for a booming industrialised economy in late antique and early Islamic times. An economy that threatened to overwhelm the formalized, but perhaps impractical, urban ideal encapsulated in classical-period Jarash (Walms-



1. Map of southern Bilād ash-Shām in early Islamic times.

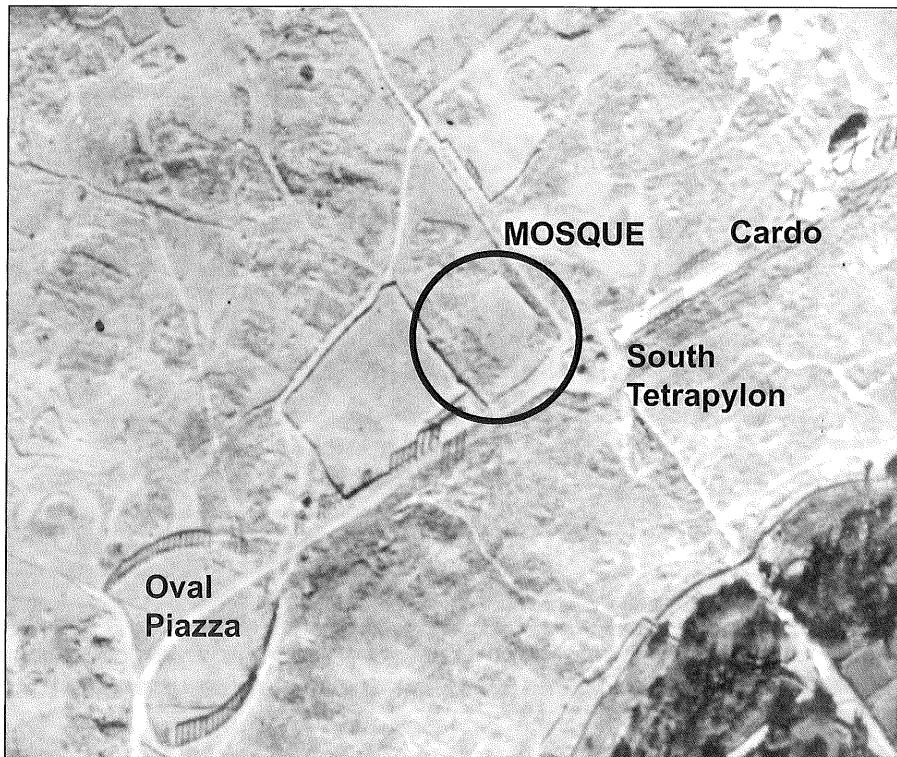
ley 2003). When considered as a whole this evidence, especially the coins, suggested the presence of an Islamic administration at Jarash, one of sufficient standing that it would have required the construction of a social, political and religious centre, focusing on a mosque. This was the building we needed to find to demonstrate conclusively a major Islamic settlement at Jarash.

Locating Jarash's Mosque (AW)

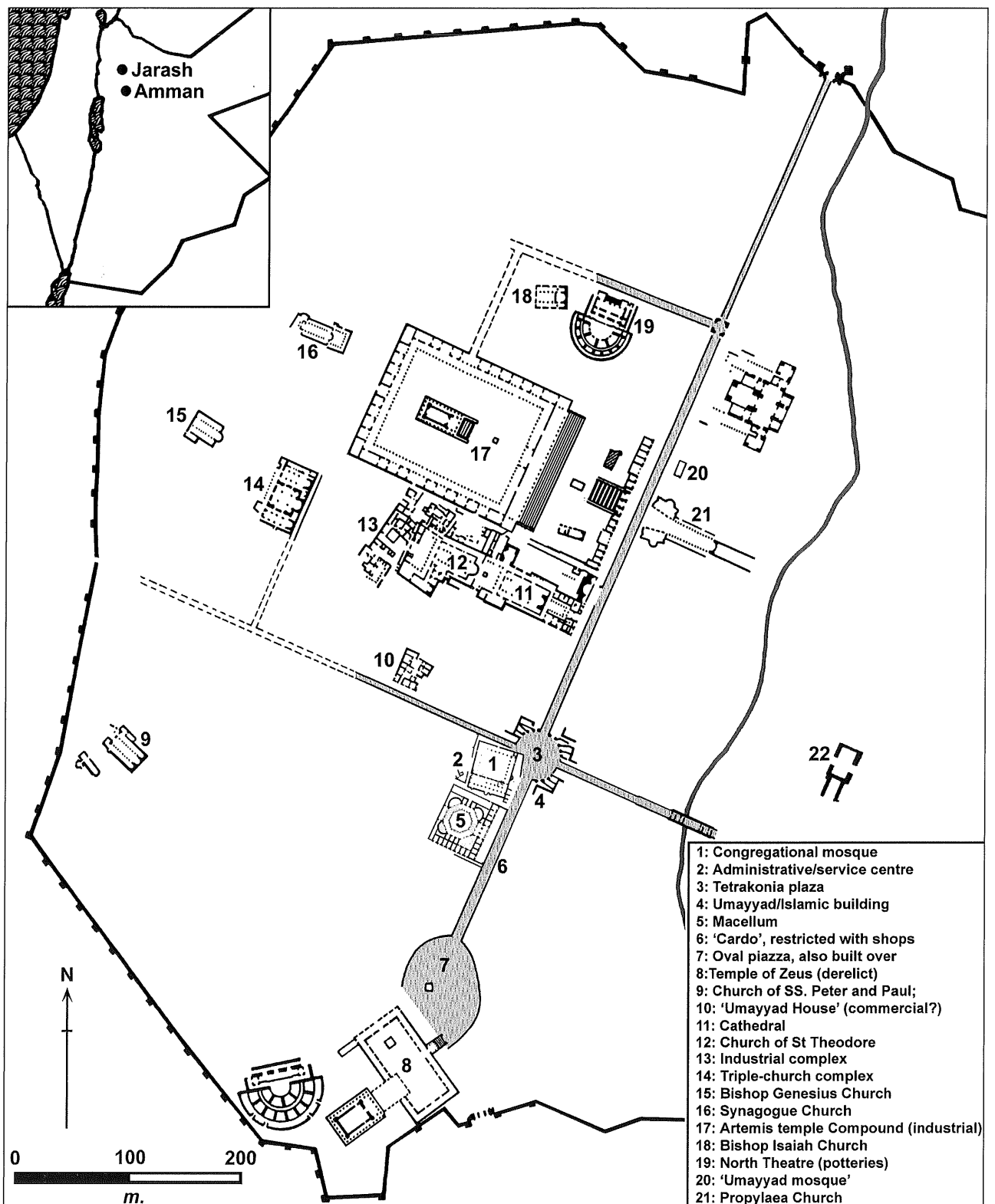
The geographical centrality of the mosque in the first Islamic cities has been known for a long time, and once convinced of the necessity of a mosque at Jarash it was just a matter of looking for it in the right place, and with the right encouragement. In this matter I am especially grateful to Dr. Ghazi Bisheh, who also suspected that there was a mosque at Jarash located in a prominent, central location. Once becoming convinced of the necessity, discovery was not especially difficult. The mosque was first positively identified on an old aerial photograph of the archaeological site taken in the late 1920s. Scanning and enhancement of the original photograph early in 2002 revealed a large rectangular enclosure to the southwest of the South Tetrakonia piazza, and partially impinging on

it. From the photograph a building measuring roughly 43.32 by 38.4 metres in size could be identified, with good evidence for a substantial tower at its northeast corner (**Fig. 2**). Along the south wall the remains of a separate room could be discerned, running the full width (east-west) of the structure, seemingly the *qiblat* (prayer) hall of the mosque. Especially revealing was the orientation of the building, which intentionally diverged from Jarash's Roman-period grid in favour of another, more pressing, social requirement: orientation towards the *qiblat*.

Additional examination of the aerial photograph revealed that the mosque was only part of a much larger Islamic urban core at Jarash, which can be mapped provisionally (**Fig. 3**). Immediately to the west of the mosque a further area of ruins could be recognized, perhaps the governor's quarters or another administrative building. Also clearly visible were more structures flanking the colonnaded south decumanus and continuing further up the slope to the west. This street seemingly served as a major arterial route for Islamic Jarash, as the paved street surface seems to have been unencumbered, whereas access along the south cardo was restricted by structures, almost certainly commercial in function. One of the buildings along the south de-



2. Detail of the mosque area at Jarash from an aerial photo of ca. 1930, on which the rectangular enclosure wall and northeast tower are clearly visible.



3. Preliminary plan of Jarash in the early Islamic period (eighth century AD).

cumanus was excavated in 1982-83 by a Polish mission (Gawlikowski 1986, 1997). It appears to have been an important unit within Jarash's commercial and market complex, comparable in

function to that excavated in the 1990s at Baysan (Scythopolis) and dated to the reign of Hisham by a mosaic inscription in Arabic (Khamis 2001; Tsafirir and Foerster 1997).

As tempting as these many structures are, the first seasons of the Islamic Jarash Project were devoted to positively identifying and fully investigating the mosque prior to restoration, as all of the above deductions are dependent on properly recognising this the most critical feature of an early Islamic urban centre. However, it was found that the area immediately southwest of the tetrakonia was relatively disturbed by a series of events, firstly by agricultural activity involving field terracing, next excavations of the Yale Joint Mission (1928-34) and, finally, more recent archaeological soundings undertaken in the 1990s. Most significant was the work of the Yale Joint Mission, whose exposure of the circular plaza around the south tetrakonia in 1929 and 1934 partially uncovered, in the southwest quadrant, a 'well built Arabic edifice ... laid out in the form of a hollow square with at least one corner tower and colonnaded porticoes' (Kraeling 1938: 114). It was suggested that this strategically-located structure was a guardhouse, a rather implausible explanation. What they had uncovered, in fact, was the northeast corner of the mosque, including the corner tower visible in the aerial photograph.

Renewed excavations in 2002, which lasted from 11 August to 12 September, sought to locate the main attributes of the mosque, especially the enclosure wall, *qiblat* hall and a *mihrāb*, the latter a critical feature if a mosque was to be proven. To begin an excavation grid was laid out over the area of the mosque, its alignment being determined by the north and east enclosure walls that had already been exposed by earlier work. The whole area was designated MO, a double-letter title being used to avoid duplication of single-letter alphabetical area designations previously used by many other missions at Jarash. Excavation units fitting a ten by ten metre grid were strategically located in potentially vital areas, especially at the axial entrance, over the *qiblat* hall, and at the place where a *mihrāb* could be expected (Fig. 4, units MO/3-MO/5). The area of the tower, reburied in recent times (the discovery of a 'Tulip'-brand tin can that once contained Danish corned beef seemed especially appropriate), was also reinvestigated (MO/2). An area of earlier excavations, opened in 1998 and still exposed, was reinvestigated (MO/1), revealing – somewhat surprisingly at the time

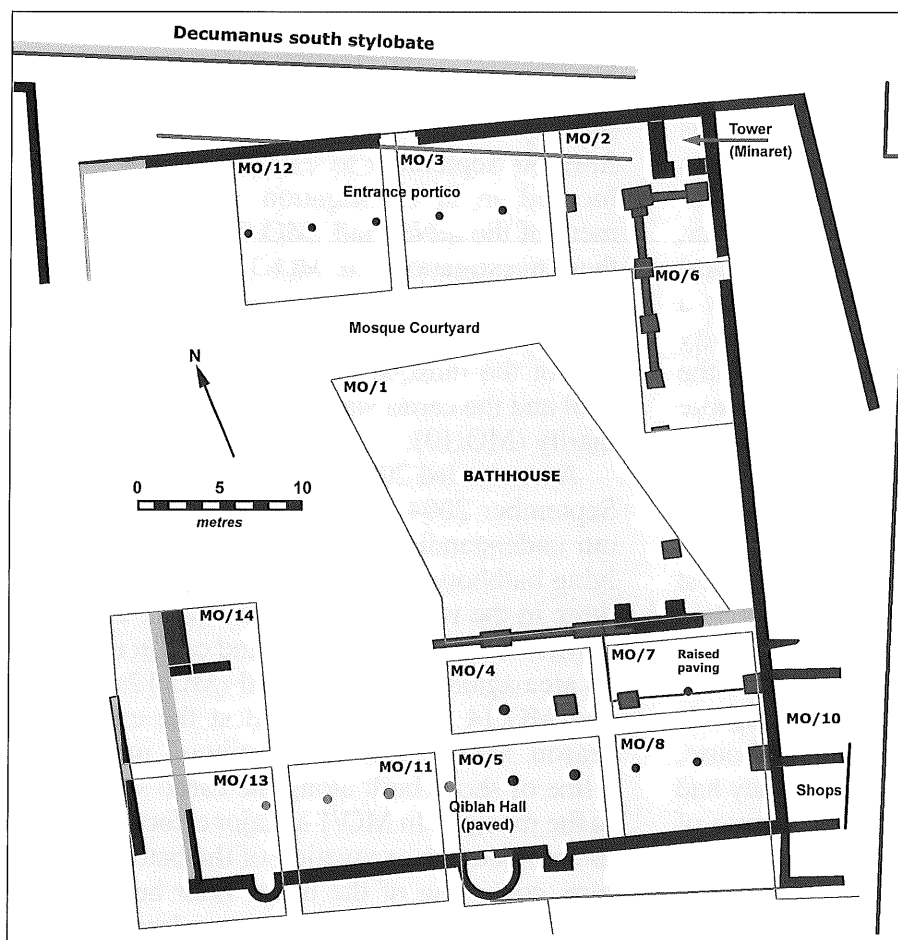
– the foundations of a bathhouse that existed on the spot before the erection of the mosque.

A more limited season, reduced due to the security situation in the region, was undertaken from 30 September to 21 October 2003. Work focused on an investigation of the eastern segment of the *qiblat* hall (MO/7-MO/8), with further investigations in MO/3 and a new probe south of the tower inside the east wall of the mosque (MO/6). The area immediately to the east of the mosque between the east enclosure wall and the *cardo* was also investigated preliminarily (MO/10).

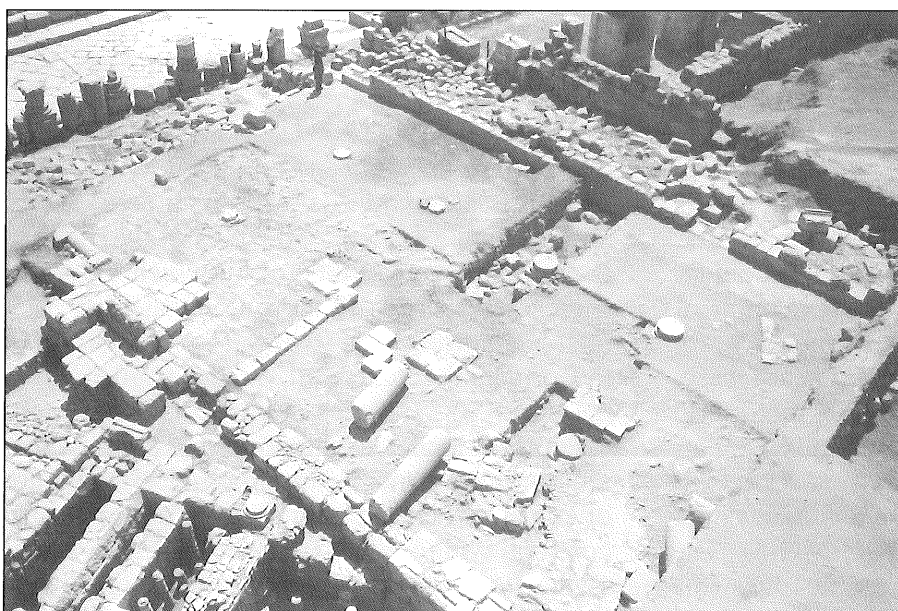
An extended 2004 season from 17 July to 12 September 2004 resulted in major advances in our understanding of the mosque and the underlying bathhouse. Four new squares were begun, three in the western half of the *qiblat* hall (Fig. 4, MO/11, MO/13, MO/14) and one in the portico area against the north wall (MO/12). MO/13 and MO/14 were unfinished at the end of the season. MO/10 was also continued, uncovering a line of shops built along the *cardo* subsequent to the mosque. In MO/1 a major effort was made to complete the excavation of the bath substructure, consisting of the under floor heating system that once warmed the rooms demolished to make way for the mosque (Fig. 5).

General Layout of the Mosque in Area MO (AW)

By the end of the 2004 season, a detailed plan of the mosque had been completed with the exception of the west enclosure wall area. While approaching a rectangle, the plan of the mosque is an irregular quadrilateral, in which the north enclosure wall of the mosque, measuring 38.9 metres, is well over two metres longer than the principal *qiblat* wall on the south, which measures 36.57 metres (Fig. 4). The east wall, set at right angles to the north and south walls, measures 44.5 metres in length. The walls are of stone, twin-faced with a rubble and red earth core and with a width of 70 centimetres. Many of the stone blocks used in the wall were recycled from earlier structures, the most obvious being large architrave blocks taken from street colonnades. As a rule, no mortar was used in the construction of the walls; however, a projecting mortar edging, decorated with incised lines in a herringbone pattern, concealed the joints be-



4. Plan of the mosque, showing excavated areas to 2004.



5. Overview of the mosque area at the end of the 2004 season, showing the central qiblat hall with central mihrāb and a section of the earlier bathhouse to left (compare Fig. 11, below).

tween the wall stones on both façades. No other plastering or decoration is apparent on the extant walls.

The major features incorporated in the walls are narrow doorways, one each in the north

and east walls, and three niches (*mihrāb*, pl. *maḥārīb*) in the *qiblat* wall on the south. A deep *mihrāb*, 3.5 metres in diameter, was axially located in the *qiblat* wall and structurally formed part of the building in its original form (Fig. 5).

Associated with this large *mihrāb* was a smaller one at the western end of the *qiblat* wall, which perhaps was intended for the resident governor of Jarash. Later in time the main *mihrāb* was blocked off, leaving only a narrow doorway for an unknown purpose. Perhaps at this time a smaller *mihrāb* with a diameter of 1.65 metres was inserted into the *qiblat* wall immediately to the east. Unlike the circular external wall of the two first niches, this *mihrāb* had a heavy square salient that projected some 80 centimetres from the external surface of the *qiblat* wall. Furthermore, the second *mihrāb* was built using a quite different mortar, a white hard lime mortar in place of a light grey ashy mortar with black specks used for the original axial niche.

The difference in length between the north and south walls explains the irregular axial symmetry of the building. It was noted in 2002 that the entrance doorway in the north wall and the main *mihrāb* of the mosque were, unusually, out of alignment, even though both features are located exactly in the centre of their respective walls, as they should be. However, because of the greater length of the north wall the doorway is offset to the west, and as the south, east and north walls lie at right angles the correction for this irregularity must be in the western wall, as yet largely unexcavated.

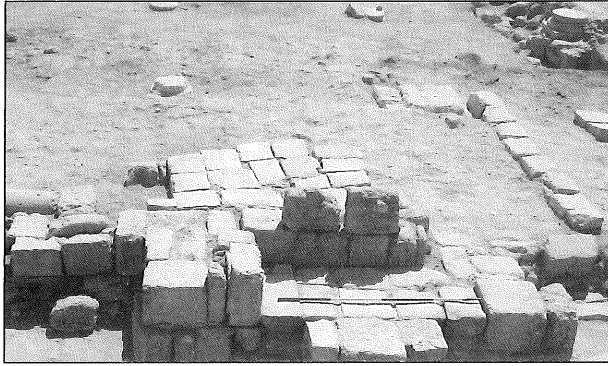
Because of the necessity to orientate the mosque towards the direction of the *qiblat* (at Jarash 160 degrees southeast), the building had to be set at an angle to the original Roman-period grid. The displacement of the building is particularly apparent with the north and east walls, which face out to the south decumanus and cardo respectively. In the early Islamic period the out-facing (entry) wall of a mosque was consistently built parallel to the *qiblat* wall to preserve symmetry, and hence at Jarash had to be offset from the decumanus. Nevertheless, even this twisting of the building's axis failed to properly align it to the *qiblat*; interestingly, if the cardo axis is taken as indicating north (which it does not), the mosque is then roughly aligned 160 degrees SE. Perhaps this was seen as acceptable.

Internally, the mosque featured a spacious but mostly unpaved courtyard. On the north, east and probably west sides stood porticoes 4.8 metres deep, made up of a single row of columns beginning at solid corner piers. The spacing between

the columns on the east side was 3.5 metres, and that on the north a slightly wider 3.8 metres. Whether arches or flat lintels spanned these portico colonnades is unclear; only one displaced voussoir has been identified. The open centre of the courtyard measured 28.2 metres E–W and 24.6 metres N–S, the latter measurement assuming the absence of a portico in front of the *qiblat* hall façade. In the northeast corner, at the junction of the north and west porticos, there once stood a 4.5-metre square tower, almost certainly an early type of minaret (on the early minaret see Bloom 1989). To carry the greater weight of a tower, its internal walls were of thicker construction, about a metre instead of the standard 70 centimetres of the enclosure wall, and were built on solid foundations that stepped out a further 10 centimetres on each side. These internal walls clearly butt up to the enclosure wall, suggesting a later construction date. The tower could be entered from the east portico through a small doorway in its south wall, the threshold of which survives.

On the south side of the courtyard once stood the central feature of the mosque: the *qiblat* hall, which probably extended the full width of the building and had a total depth (N–S) of 13.8 metres. Excavation of the *qiblat* hall has identified two parallel colonnades in front of the *qiblat* wall, with an open entrance from the courtyard (*Ṣaḥn*) featuring arches on solid piers. Their deep and substantial foundations indicate they were designed to carry the considerable weight of a tiled roof. Many fragments of ceramic tiles have been recovered, and in total over five tonnes of smashed roof tiles have been excavated within the *qiblat* hall area. A most interesting and unusual feature is the discovery of evidence for solid walls at the point where the east and west courtyard porticos joined the façade of the hall. They probably helped to support the porticoes, which were also tiled, at their south ends. On the east, the wall was pierced with a doorway, the threshold of which survives. That doorway led to an enigmatic raised paved platform in the northeast section of the *qiblat* hall (Fig. 6).

The arrangement and function of buildings adjoining the mosque have been considerably clarified by the three seasons to date, but with more yet to be done. Excavation along the outside of the east wall of the mosque has exposed



6. Platform area in the northeast quarter of the mosque's qiblat hall. In foreground, to left: east portico-qiblat hall doorway; centre-left: T-shaped pier of portico arcade; right: surviving segment of courtyard pavement; middle ground: surviving elevated qiblat hall paving with, to right, stone edging for the paving. Note the sub-paving packing terminates at the first line of the hall arcade (middle distance).

a row of shops (Fig. 7). These projected south of the qiblat wall, but were aligned with the lane that ran between the mosque and the macellum, along a line drawn from the main *mihrāb* to the south wall of the shops. The shops were built to butt against the mosque's east and south walls, and faced eastwards out onto the *cardo*. Their eastern limits are not preserved, and seem to have been removed when the *cardo* was cleared in the earlier part of the twentieth century. To the northwest and the north of the mosque, elevated terraces originally gave access to the doorways of the mosque. While evidence for this has large-

ly gone on the north side, due to earlier twentieth century clearing, some features can be identified revealing the importance of this approach to the mosque. Notably, the northern platform could have only existed if the south colonnade of the decumanus had been dismantled, for it ran over the stylobate of the colonnade.

Evidence for at least two large buildings located in a level area west of the mosque is just beginning to be revealed. Of these two buildings, the southern one might well be the governor's palace, given its proximity to the qiblat hall and, especially, the positioning of a *mihrāb* at the western end of the qiblat wall. Both buildings were separated from the mosque by a roughly 2.5 metre-wide laneway, which linked the lane between the mosque and the macellum with the south decumanus to the north.

In order to understand the history of this pivotal area of Jarash before the construction of the mosque, much effort has been directed at excavating the earlier underlying bath complex that was demolished to make space for a new public building in Jarash. Work has focused on four large hypocaust chambers, with evidence of a makeshift refurbishment after the collapse of some of the floor supports. Subsequently, all of the sub-floor hypocausts were filled in with building debris, including a great deal of broken roof, floor and wall tile. Pottery finds would suggest a date in the first decades of the eighth



7. View of the shops east of the mosque, looking northwest.

century for this fill. Following the in-filling of the complex's hypocaust system, small basins were constructed in the rooms. These appear to have been for industrial purposes, as the hardened residue from the waste drains suggest. As the entrance piers of the *qiblat* hall were dug into the hypocaust fill, the industrial conversion of the bath house must have predated the construction of the mosque.

The Qiblat Hall (IRS)

The *qiblat* hall (prayer hall) was laid out to an oblong plan, bounded on the south by the principal *qiblat* wall, which is 36.57 metres in length, in front of which once stood two parallel colonnades, each made up of a row of eight columns (Fig. 4). The *qiblat* hall opened from the courtyard or *Ṣaḥn* behind an entrance façade of piers standing in front of the double colonnade, giving the hall a depth of approximately 12 metres. The outer walls of the *qiblat* hall were made from moderately well-dressed limestone blocks, each course containing a double row of interlocking stones with mortar pointing and a *terra rosa* earth fill. At the west end of the *qiblat* the wall remains standing at three to four courses above floor level reducing in height to the east until only wall foundations have survived.

As part of the main *qiblat* wall, excavation has uncovered three *miḥrāb*(s) (correctly, *maḥārīb*): a large central *miḥrāb*, a smaller sec-

ond *miḥrāb* immediately to its east (Fig. 8), and a third *miḥrāb*, slightly larger than the eastern one and situated towards the end of the *qiblat* wall some twelve metres west of the central *miḥrāb*. The central and western *miḥrāb*(s) each have a round salient, while the small *miḥrāb* east of the central axis has a square external projection. The central *miḥrāb* – originally the main *miḥrāb* – was blocked in a later phase, leaving a small doorway within the blocking. This change may suggest the use of the *miḥrāb* as a place of storage. It is logical to suggest that this modification was made at the same time as the eastern *miḥrāb* was inserted into the *qiblat* wall. The western *miḥrāb* appears to be contemporary with the original building. It is separated by some distance from the other *miḥrāb*(s), pointing to differential use of space at this end of the *qiblat* hall. If an important building is located west of the mosque it may have had direct access to the *qiblat* hall or courtyard via an entrance in the western wall, although no evidence of this has been found so far. The *miḥrāb* recesses do not appear to be framed in any way. No evidence of a *minbar* has been found, but if there had been one it is likely that it was made of wood and has not survived.

The whole area inside both the courtyard and the *qiblat* hall was graded in order to provide a level base on which to construct the floor. The bed laid down was extensive since it had to



8. The primary axial *miḥrāb* and a secondary (substitute?) *miḥrāb* to its east.

compensate for the camber of the area, which falls to the east, and to raise the mosque floor level above the remains of earlier structures. In the *qiblat* hall the floor was then paved with smooth flagstones, which survive today only in patches. The column bases of the colonnades are generally below floor level and rest on deeper stone-block foundations. Accordingly, only the columns themselves would have been visible, rising up from the floor as the bases served as foundations for the columns and were not intended to be decorative in purpose. Most of the column bases are still *in situ* but all the colonnades have collapsed. While several column drums have been found in the *qiblat* hall, presumably from the colonnades, excavation has not provided evidence for whether they carried arcades, although this is likely. The colonnades terminated at stone piers that projected out from the east and west walls of the hall.

The entrance façade to the hall was made up of a line of piers one of which, that at the west end of the entrance façade, has been preserved to first course level. It is very solid and built from better dressed stone than the mosque walls. The pier preserves a plaster facing, indicating that the entrance façade was perhaps plastered in its entirety. Unexpectedly, the west wall of the mosque butts the north face of this pier and until further excavation the exact construction and plan of the west wall is unclear.

The piers stand on a substantial foundation wall that runs the full span of the mosque (Fig. 9). The foundation wall is made up of pier bases that run four courses deep and are slightly larger in plan than the piers, with lengths of shallower foundation bracing walls between the bases. The piers at the east and west ends of the entrance façade have a short buttressing wall on their courtyard face, meaning these two piers have a T-shaped plan. The buttressed piers are located at the two points where the portico colonnades of the courtyard join the piers at either end of the hall entrance façade, and the buttressing is thus designed to support the end of the porticoes. The substantial foundations and sturdy build of the piers show that they were designed to carry the weight of a tiled roof over the *qiblat* hall. Excavation has also revealed that the colonnades inside the *qiblat* hall were also built on sizeable foundation bases.



9. Foundations of the load-bearing façade of the *qiblat* hall.

At the east end of the façade to the *qiblat* hall are the remains of a doorway leading from the east portico into the hall (Fig. 6). One half of a stone threshold remains, behind which there is step structure consisting of a half-buried column piece laid horizontally flanked by stones. The doorway appears to be part of the original building design, and led to an area of paving that appears to have been part of a raised platform in the northeast corner of the *qiblat* hall. About 20 stone flags of the paved platform remain, elevated slightly above the level of the few other remaining areas of paved floor in the *qiblat* hall. The surviving paving of the raised floor clearly continued over a larger area, the western limit of which is delineated by a single row of building stones oriented north-south. This feature ends at the first (northern) colonnade in the *qiblat* hall, suggesting the raised floor terminated at this line of columns. Further evidence for the area covered by the elevated floor was found in the form

of an area of compact yellowish clayey packing surrounding the raised paving and continuing underneath it, probably laid down as bedding for the paving. The bedding layer fades out to the south and drops slightly in height around the first colonnade, confirming that the raised floor probably ended at that point.

The raised floor would seem to be part of the original mosque design, creating an area that was, to some extent, separated off from the rest of the *qiblat* hall. To the north of the platform an infilling wall was built, presumably as a later addition, running between the first and second piers at the east end of the entrance façade to the hall. The doorway entrance suggests complete bounding off of this platform space and control of access, otherwise a doorway in the entrance façade would seem pointless without also dividing off the area from inside the *qiblat* hall, which otherwise had open access from the courtyard. Thus a wooden screen, similar to a *maqṣūra* screen, may have been used to divide the platform area from the rest of the hall. The purpose of this area is not clear, but perhaps functioned as the madrasa of the mosque.

At the other end of the entrance facade of the *qiblat* hall, in MO/14, there is another infilling wall that runs between the outer mosque wall and the first pier, similar to the wall between the piers at the east end. The west infilling wall is a later addition but it is presently unclear whether it was built to brace the pier or to modify use of the space in some way. Further excavation should clarify this. Certainly, the raised platform at the other end shows that the *qiblat* hall acted as a multifunctional space in the mosque. In front of the west infilling wall in the entrance façade layers of a hard clay floor were found that appears to be the floor surface of the portico, which perhaps extended throughout the courtyard.

So far over five tonnes of roof tile pieces have been found within the *qiblat* hall. The oblong plan of the hall, with its *qiblat* wall, the double colonnade and the row of entrance piers, suggests a long triple-gabled roof covered the *qiblat* hall. The tile fragments have mostly been recovered from a thick dark layer that is largely uniform throughout the *qiblat* hall. No complete roofing tiles have been found, probably because any roof tiles that had not smashed were taken for reuse elsewhere after the initial collapse of

the roof. Other salvageable building materials were also taken and only a few small areas of the paved floor remain. Post-collapse salvaging activity would explain the disturbance of the collapse layer.

There is a great deal of stone tumble lying outside the mosque walls from the collapse of the *qiblat* hall. Much less stone is found inside the hall, which shows that the walls fell outwards, pushed by the force of the heavy roof. The pattern of the fallen outer walls, the uniformity of the collapse layer and abundance of roof tile fragments indicate that the roof and some of the mosque walls collapsed in one event.

The North Portico of the Mosque and Underlying Workshops (KD)

The northern part of the mosque has been explored in two specific areas: the northeast corner structure (*manārat*) including the old Yale trench, and the north wall and portico, which has been excavated in two units: MO/3 and MO/12. The main function of these units has been to ascertain the existence of the mosque's northern *riwāq*, and to explore the relationship between the planning and construction of this portico, the north wall and the *Ṣaḥn*.

Unit MO/3

This excavation unit was opened in the first season of the project and was excavated in the following 2003 and 2004 seasons. The original intention of this square was to undertake a cross-section of the blocked entrance in the north wall of the mosque, and to investigate which type of surfacing would have extended into the mosque from the doorway. A more long-term goal is to examine the circumstances under which the mosque was constructed, and hopefully to contribute to the establishment of a firmer date for the mosque.

Among the earliest discoveries in MO/3 were a number of large worked stone blocks scattered south of mosque's northern wall. These appeared to be tumble from the collapsed north wall, since the compact *terra rosa* used as filling in the outer walls of the mosque was discovered both among and on top of the ashlar. A large amount of fragmented roof tiles was also discovered on top, among and underneath this collapse.

Immediately south of the blocked doorway

another area of tumble was identified; however, its separate placement in relation to the wall tumble in an area of loose greyish soil allowed us to deduce that this tumble must have originated from the blocking of the north entrance. In other words, the entrance was blocked after the original construction and use of the mosque, but seems to have suffered the same fate as the walls upon the building's destruction.

Although a yellow-white clayish soil with plaster inclusions was discovered in parts of the square, no immediately obvious surface was identifiable below the tumble. This is probably because the original surface would have consisted of earth, and it is possible that the collapse, followed by looting and centuries of disturbance due to plant roots seriously damaged this flimsy surface, making it difficult to discern.

Among the most important features to be discovered in the first season were two well-dressed column bases, presumably part of the northern portico; a column drum lying horizontally; and a large stone block used as the foundation for one of the column bases. Upon closer inspection, it was determined that the large block was Roman spolia, as it contained a well-preserved Latin inscription in which a father honours his fallen son. Excavation of the sondage in 2003 and 2004 revealed that this block extended deeper into the ground than expected, and its exact dimensions remain unknown.

With the intention of attaining a stratigraphic profile of the blocked doorway, a 2.5 by 2.5 metre sondage was laid out in the north-western corner of the excavation unit. In the following two seasons, this sondage was extended both horizontally and vertically in order to investigate the area's history immediately prior to the construction of the mosque. The remains of a low wall running east-west were discovered in the first season, followed by more extensive remains in the following year, when the sondage was extended southwards to span the entire length of the square.

In the north-western corner, not far below the estimated floor of the mosque, a small stone basin was unearthed. An area of grey ashy soil extended eastwards from this point and both in and around the basin a high density of metal slag was found, indicating the presence of a metal workshop or blacksmith. The space was enclosed

by three walls, which seemingly delineated the workspace. Finds included numerous iron nails, perhaps being produced in this workshop, a copper buckle and an early Islamic post-reform coin, the latter seemingly in the room fill following its demolition. In the southern most end of the sondage, two floors, one atop of another, were exposed. The original flooring, revealed only in a small area, consisted of a yellowish monochromatic mosaic. Laid on top of this, and marking a subsequent phase of construction, were the remains of a ceramic tile floor.

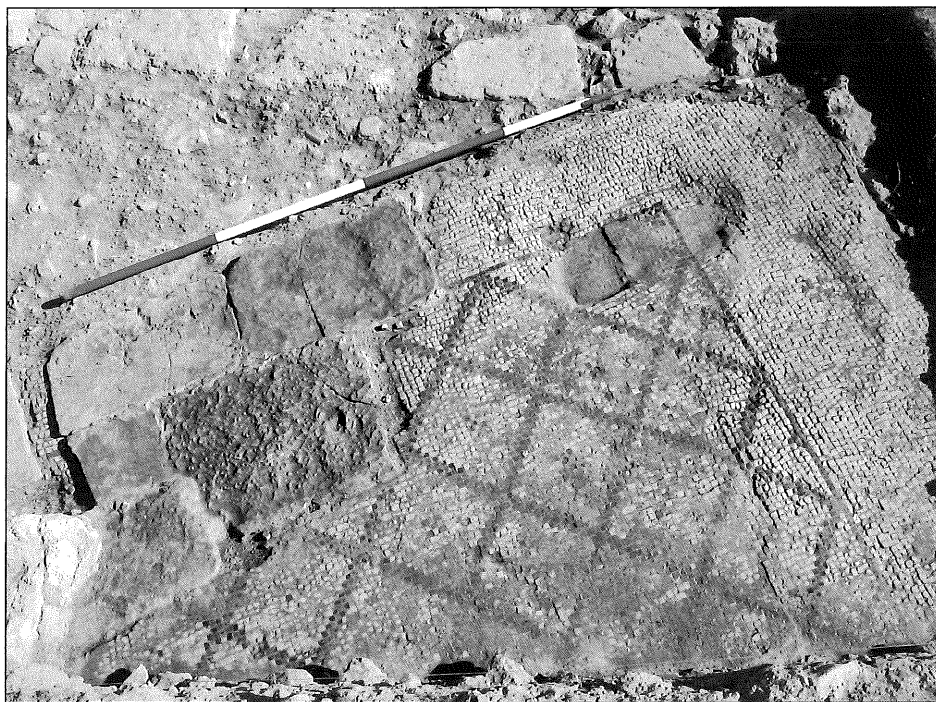
In 2004, the sondage was extended eastwards in the northern end of the excavation unit in order to investigate how far the two floors extended to the east. Surprisingly, most of the northern end contained well-preserved remains of the mosaic floor, whereas little evidence of the ceramic tiling was discovered. What in 2003 had consisted of a few small patches of monochrome mosaics, in many places covered by the mortar setting for the tile floor, was in 2004 shown to be a much more spectacular discovery. Yellow, red, orange and brown highlighted this section of the mosaic floor, which had been laid out in a pattern of geometric motifs (**Fig. 10**). Whether further excavation will reveal more of this mosaic and to what extent this floor is related to the bathhouse in MO/1 and the construction of the mosque, are among the important questions which will be explored in coming seasons.

Unit MO/12

Unit MO/12 was not opened until the beginning of the 2004 season. It was laid out as ten by ten metre square in alignment with the overall grid, and was placed directly west of MO/3.

The square did not reach a considerable depth in 2004. The most significant discoveries were: three further column bases in perfect alignment with the two discovered in MO/3; some stone tumble presumed to originate from the north wall (but not nearly as substantial an amount as was found in MO/3); and an architectural element, which proved to be a fragment of the carved door-casing of the blocked doorway.

As in MO/3, the upper strata yielded substantial amounts of fragmented roof tiles, which are presumed to derive from the roofing of the portico. Similarly, chunks of yellowish-white plaster were among the tiles, and it is preliminarily sug-



10. Mosaic panel in the south of the sondage in Unit MO/3.

gested that these are the remains of the mortar applied in the construction of the roof.

In the north-western corner of the square a section of the wall was revealed, which appeared to comprise another blocking. This blocking was clearly visible in the north face of the wall, and it was tentatively concluded that it constituted an access point to a drain leading from inside the mosque (or bathhouse) to the sewer of the Decumanus.

Finally, it should be noted that a modern cable trench running east west cut both MO/3 and MO/12. This trench was approximately half a metre below the surface, and consisted of a ditch lined with concrete slabs, and including an electric cable set in a filling of red sand. This feature was easily discernable, and was removed without problems in both squares. The electric cable itself remains in place for the time being.

MO/6: A Section through an Old Yale Baulk (IRS)

In the northeast area of the courtyard, in Unit MO/6, we identified within recent refill an earth wall left standing from excavations of the South Tetrakonia conducted by Yale University between 1928 and 1934. Yale plan drawings show that the line of this baulk was delimited by a buttressing wall that ran east to west between a pier base of the east portico and the east wall

of the mosque. According to the plan the buttressing wall appears to be only one course and was apparently removed during the Yale work. With the exception of the old Yale baulks the other deposits in MO/6 postdate the Yale excavations. Since the old Yale baulk represents the original foundation fill of the mosque, a section was excavated along its length to examine this fill material.

The stratigraphy of the section suggests two possible building phases for the east wall of the mosque. A clear cut-line could be seen running through the foundation fill material from the surface of the old baulk to end against the east outer mosque wall. Interestingly, the cut meets the wall at a point slightly below where the coursing changes from uneven faces without mortar to courses with smooth faces and mortar pointing. This may represent a cut that was made into the foundation fill to build a second phase of the outer wall, marked by the corresponding change in the coursing. An initial phase would have preceded this in which the lower, less even courses of the superstructure were built and the bedding of fill was laid. Alternatively, the cut may not be a real cut but an apparent unconformity that formed because fill material was never deposited in the first place along this surface represented by the 'cut'. This would be possible considering how quickly and unevenly foundation fill mate-

rial may have been moved in.

Excavating the section through the old baulk also exposed the lowest level of the mosque outer wall and courtyard foundations. The foundation fill deposits in MO/6 contain numerous plaster inclusions and some stones with plaster facing – an assortment resulting from the levelling of earlier structures on which to build the mosque foundations. Earlier structures were only completely removed where the outer mosque walls were built, whereas the trend inside the mosque was to build foundations on top of existing solid structures, thereby integrating them where they coincided with the planned mosque foundations, even though their orientations differed. Finds were few in number and almost all were pot sherds.

The inner face of the east outer wall of the mosque was exposed to its base level where it sits directly on the South Tetrakonia plaza. Below the base of the outer face of the wall the outline of an entrance to a room behind the earlier circular façade of the South Tetrakonia is clearly visible in the plaza paving. On the old Yale plan the outline of this earlier structure is drawn where the mosque wall is standing. Excavation in 2003 showed that the stone threshold is missing from the entrance to the room below the base of the mosque wall, and it is most probable it is this threshold that was removed and installed in its current position in the east outer wall of the courtyard as an entrance to the mosque. According to the Yale plan, the previous excavators drew the same conclusion, although they thought the building was a fort, not a mosque. Outside the entrance in the east wall of the mosque, built on the plaza of the South Tetrakonia, is a small outer mosque enclosure wall that may be the edge of a platform that led up to the east entrance.

MO/10: The Cardo Shops (ML)

In the 2004 season, a new focus of work turned to the area immediately east of the mosque, more precisely to the area between the mosque's eastern enclosure wall and the Cardo. The excavations produced further details about the eastern enclosure wall of the mosque and uncovered other structures, identified as shops, built between the mosque and the cardo (Figs. 4, 7).

Exposure of the eastern enclosure wall revealed it to be a two faced construction 70 centimetres in width and with a central packing of compact *terra rosa* soil, as elsewhere with the mosque. The variety in the quality of the stone blocks and the presence of fitted column fragments in the wall construction indicate that the enclosure wall was, at least in part, constructed using recycled building material. The use of hard mortar in the wall construction was only present on the edges of the very largest of the stone blocks. However mortar, with incised lines in a herring bone pattern, was commonly used to conceal the joints of the stone blocks, both on the inner and outer facade.

During the 2004 season the foundation course of the mosque wall was reached. A sondage in MO/10 on the east side of the wall revealed the foundation stone course along with a foundation trench, which consisted of a layer of red-brown medium compact silty clay. The visible limestone blocks were roughly cut and measured ca. 40 by 35 centimetres, which is roughly the same size as the average excavated stone blocks originating from the wall. At the end of the 2004 season the eastern enclosure wall consisted of five courses standing to a maximum height of 2.6 metres.

New Discoveries Abutting the Eastern Enclosure Wall of the Mosque

During the removal of stone tumble originating from the east enclosure wall of the mosque, new walls appeared. These walls (Walls 4, 5 and 6), running E-W, all butt the enclosure wall. They were two faced constructions with occasional bridging stones intended to stabilise the construction. The central packing of the walls consisted of yellow clayish soil with small stone inclusions, thereby differing from the *terra rosa* packing used in the construction of the mosque enclosure wall. Two already exposed walls, one running N-S to butt the mosque's SE corner (Wall 2) and the other bonded to the first and running E-W towards the Cardo (Wall 3), marked the southern limit of the structures to which the newly excavated walls belonged.

No noticeable difference could be observed in the quality of the stone blocks used in the abutting walls to the quality of the stone blocks used in the mosque's eastern enclosure wall. How-

ever, comparing the colour of the wall packing with the colour of the soil in the stone tumble layers, it would seem that the walls butting the mosque collapsed prior to those of the mosque, as the stone tumble layers with *terra rosa* soil were superimposed on the yellow clayey soil stone tumble layers. The time span that separates the two events is unclear.

The walls would seem to belong to shop enclosures. A total of five units were identified along the south part of the mosque's eastern enclosure wall stretching approximately fifteen metres and approximately five metres E-W towards the *Cardo*. Excavation was concentrated on the two southernmost units, shops A and D.

The excavation of Shop A revealed a considerably larger amount of roof tiles than found in the other enclosures. Underneath this layer of collapsed roof, fine stone fragments remained from what seems to have been the paving of the shop. Several fragments were found, one *in situ* superimposed by an up-right stone, probably part of some sort of feature used in the shop. Two stones situated next to it could be associated with this feature. Finding only fragments of the paving may suggest that the shops were abandoned before the walls collapsed. The fine stones were probably removed in antiquity and reused somewhere else prior to the collapse of the roof and the walls.

Shop D revealed several interesting features. The floor level in the back of the shop was elevated and this platform was lined by a row of stones. An *in situ* stone jar was excavated on the elevated bench.

Unfortunately no specific features or finds could help us identify the type of shops recovered. The lack of finds though confirms the assumption that the shops were abandoned before the walls collapsed.

A fragmented mosaic floor was carefully excavated in MO/10. It was detected in the area close to the stylobate abutting the western edge of the *Cardo* and on the lower plateau in Shop D. It continued underneath Wall 4, the dividing wall between Shop A and D, which led us to believe that the mosaic floor was the remains of an earlier period, buried with the construction of the shops. The mosaic lay under the shop's floor level, and was covered by a sub floor packing consisting of a layer of compact yellow clayey

silt and a layer of small stones and pebbles.

Viewing the cityscape of Early Islamic Jarash, shops were not uncommon features. Along the South Decumanus, a line of shops were excavated in front of the so called Umayyad House (Gawlikowski 1986: 113, 1997). During the clearing of the area by the South Tetrapylon northeast of the mosque, a black smith's work shop and housing were likewise unearthed (Kraeling 1938: 105). Buildings, perhaps more shops, were also present in the area overlaying the *Cardo* (Harding 1949: 19). Hence, the location of the shops butting the mosque and positioned next to the *Cardo* fits very well with the existing evidence of urban activity in the area surrounding the mosque in Jarash during Early Islamic Period.

Comparisons and Implications (AW)

The Jarash mosque shares many attributes with the Friday mosques identified at Ruṣāfa, 'Ammān (downtown) and Qaṣr al-Ḥīr al-Sharqī, all built during the productive two decades of the caliph Hisham ibn 'Abd al-Malik (724 -743AD). That at Ruṣāfa, Hisham's chosen abode, is very close in style to the Jarash mosque, although it measures 40 percent larger as would fit the role of Ruṣāfa as a caliphal capital. A courtyard mosque, it originally featured single-colonnaded porticos on the north, east and west sides and a triple-bay *qiblat* hall to the south, open to the courtyard and with a triple-gabled roof running parallel to the *qiblat* wall (Sack 1996). A combination of columns and piers were used in the construction of the *qiblat* hall and porticos, which were roofed with tiles. Proportionally, the Ruṣāfa mosque is longer than the Jarash one (at 1:1.39 or ca. 5:7 compared to 1:1.14 or ca. 7:8 for Jarash). Similarities with the downtown 'Ammān mosque, as researched by Alastair Northedge (Northedge 1989, 1992: 63-69), are also apparent, although at 1:1.42 (ca. 5:7) the 'Ammān example is again appreciably longer than it is wide. Otherwise it presents much the same general plan: court, porticos and *qiblat* hall, the latter with two (perhaps originally three) lateral colonnades. Further discussion of the shared architectural traditions of the Jarash mosque with other mosques of the eighth century will, of necessity, have to await the positive location of the building's west wall.

MO/1: The Late Antique Bathhouse (LB)

Introduction

The excavation of the Byzantine bathhouse (designated MO/1) was initially begun in 1998 by the late Mr. Ali Musa and a team from the Department of Antiquities. Sadly, due to the sudden death of Mr. Ali Musa, the results from the excavation were never published. Therefore, when the team of the first Islamic Jarash Project arrived in Jarash in summer, 2002, the existence of a bathhouse in the middle of the area to be excavated came as something of a surprise to the project participants. It became this author's assignment to supervise the work in the bathhouse, with the primary objective of sorting the building sequences without any knowledge about the previous excavation methods or aims. During the years since the work of Ali Musa, nature had reclaimed the area of MO/1, and only after clearing and much cleaning did the central features of the bathhouse become visible.

These main features of the bathhouse are as follows (**Fig. 11**):

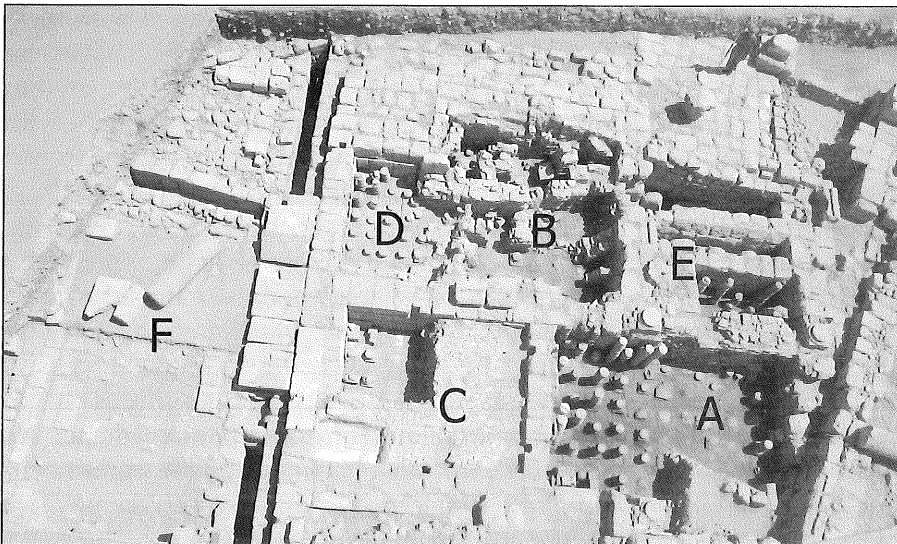
- An east-west running wall in the northern part of MO/1 that continues into the west baulk;
- A north-south running wall in the centre of MO/1 which butts the east-west wall;
- Lined against the north-south wall are five underground rooms, all part of the bath's hypocaust, each of which were given a letter (Sectors A-E) according to their position in the hypocaust system;
- Components of a sewage system in the north-

ernmost part of MO/1, designated as Sector F.

Evidently, no superstructure is left since the mosque was located directly over the bathhouse. The building material was most likely removed and reused when the mosque was built. The only preserved architecture that originally was above ground is three column bases in the southwestern part of MO/1 and three basins, which are spread throughout the building; additionally, we must assume that the highest preserved part of the walls were originally at floor level.

Unit MO/1 was excavated over three seasons: 2002 and the two sessions of 2004. The primary objective has been to uncover the hypocaust system and, in so doing, establish the construction phases and the use of the bathhouse. Secondly the drainage system has been partly investigated.

Generally, the bathhouse consists of single-row limestone walls. Most of the hypocaust rooms (Sectors A, B, C and D) are lined with wall tiles, while all the rooms contain floor tiles and round ceramic hypocaust pillars made of stacked tiles. In order to connect the rooms for heat circulation, brick arches were built into the limestone walls. Except Sector D, tile constructions were erected in order to support the weight of the *suspensura*, these constructions consisting of *tegulae* (flat rectangular tiles), *pilae* (solid round tiles) and square bricks. *Tubuli* (box flue tiles) were found *in situ* in Sector E and in the filling of Sectors A, B, and C. In the following each area will be described in detail, before any comparison is undertaken, in order to establish a



11. Overview of the bathhouse, showing sector designations.

building sequence in terms of use and construction.

Sector A

The room in Sector A is located in the south-western part of MO/1, and it is by far the largest room in the hypocaust. It is rectangular and contains approximately ten by six *pilae* and two tile constructions, of which only some *pilae* remain standing at the north end (Figs. 11A, 12). To the north the room is defined by a limestone wall, which separates it from the room in Sector C. It butts the north-south running central wall to the east where three brick arches connect it to Sector E and one to Sector B. To the south it is connected to an unexcavated area by two brick arches, and to the west it is defined by a solid lime stone wall. Three limestone columns are associated with Sector A. These are surrounded with *in situ tubuli*.

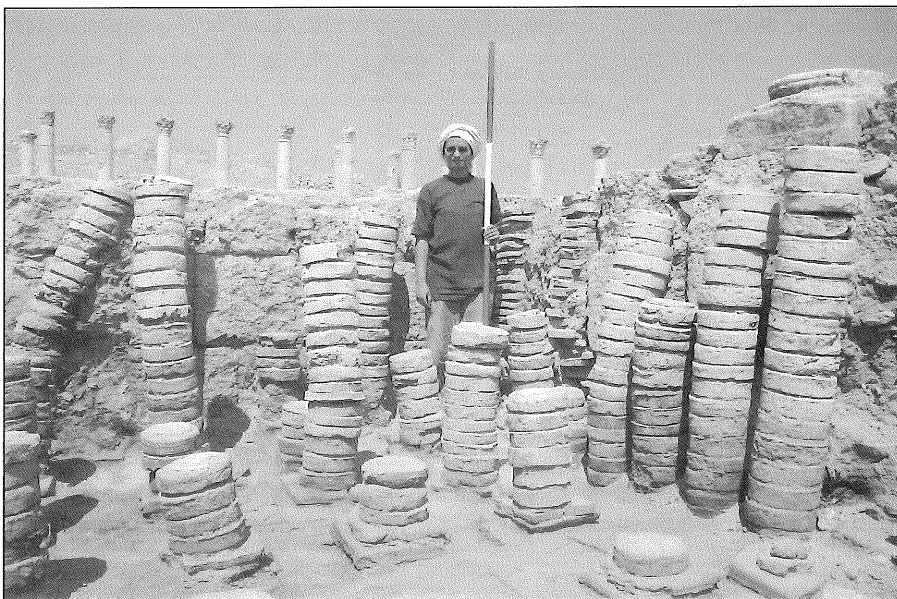
The excavation of Sector A demonstrated that it was filled at one time when the room went out of use. This assumption is based on the content of the filling, which mostly remained the same from top to bottom; there is however a large concentration of tiles near the bottom of the filling. This is due to the collapse of the *pilae* when the room in Sector A was filled up; most of the tiles lay in rows where they had fallen or were scattered in the lower part of the filling. It seems that the Sector A room was the last one that went out of use, since no paving was constructed on top of the filling, which was the case in the rest

of the hypocaust rooms. This could indicate that this room kept functioning until the mosque was erected.

Sector B

The room in Sector B contained only four standing pillars, impressions of several pillars that no longer exist and several floor bearing tile constructions of a different date (Fig. 11B). Originally Sector B was divided by two north-south running tile constructions each containing an arch. Furthermore, an east-west running tile construction, also containing an arch, connected Sector B to the northern Sector D. The three original tile constructions consist of small bricks. Towards the west, Sector B butts the central north south running wall, which is interrupted by three tile arches, one connects the room in Sector B to A; while the others lead to Sector C. To the south and east limestone walls define Sector B. At some point several floor bearing constructions were added to the room in Sector B; the reason for this could be that the *suspensura* had become unstable. This assumption is based on the fact that these tile constructions consist of several different tiles, contrary to the ones described above, namely of *pilae*, bricks, and *tegulae*; furthermore, they are not in line with the rest of Sector B, but are contrarily scattered with only a functional relation to the original walls and tile constructions.

When the excavation began, Sector B was covered in a thin plaster layer, most likely rep-



12. View within the hypocaust room in Sector A of MO/1.

resenting the remains of paving. After removing this, the filling was identical to the bottom. It mainly consisted of numerous broken tiles, both *tegulae* and *pilae*, and sheds from broken pottery. It differed from the filling of the room in Sector A and it is therefore assumed that the two rooms were not filled at the same time.

Sector C

This part of the hypocaust is positioned directly north of Sector A; it is defined on all sides by limestone walls (**Fig. 11C**). It is connected to Sector B through two tile arches in the eastern wall. Sector C has not been completely excavated, but a probe was made in the north-eastern corner. An upper paved surface in Sector C consisted of small tiles and plaster, associated with which was a basin in the north-western corner of the room (**Fig. 13**). Excavation of the room revealed that this surface was laid over a homogeneous fill very similar in character to the filling found in the room of Sector B. Most probably the two areas were filled up at the same time.

Furthermore, the probe in Sector C revealed a few *in situ pilae* and floor tiles. These were identical to the ones in Sectors A and B both in technique and type of material. This indicates

that the three areas were constructed at the same time and all were part of the first bathhouse phase. Sector C contained six chimneys carved into the limestone walls. These chimneys were responsible for drafting the hot air through the hypocaust.

Based upon the composition of the room filling, Sectors B and C were almost certainly filled at the same time, whereas Sector A did not finally go out of use until the mosque was built. Therefore, another solution had to be sought in order to draft the hot air through the hypocaust, as will be considered below.

Sector D

This room is situated to the east of Sector C and directly north of Sector B (**Fig. 11D**). It is connected to the rest of the *suspensura* through the tiled arch connecting the rooms of Sectors B and D. The room originally consisted of approximately 25 tile pillars. As this part of the hypocaust system had already been excavated by Mr. Ali Musa, no conclusions can be made about the filling and paving, if any, that were originally there. The Sector D room is raised, compared to the rest of the area, by approximately 0.5 metres. Furthermore, while the rooms in Sectors A,



13. Basin and upper paved surface in the room of MO/1 Sector C.

B and C consist of tiles, which were constructed by several potters (judging by the potters marks), only one workshop was involved with the construction of the Sector D room. While the tiles in Sectors A, B and partly C were very decayed, due to the constant exposure to heat, this was not the case in Room D, where all tiles are still intact. This could indicate that Sector D was a later addition to the bathhouse, but further examinations must take place in order to make any final conclusions.

Sector E

The last addition to the bathhouse was, according to the existing data, the hypocaust room in Sector E. Sector E is situated east of Sector A (**Fig. 11E**), and in its present state it is a very small room consisting of only seven tile pillars and one floor supporting tile construction, but it has gone through a major alteration. When the excavation of the area began, the only indication that this was once part of the hypocaust were three tile arches in the eastern wall in Sector A. Sector E itself was covered with several different architectural features, among these a basin and a threshold. In the south eastern corner of the basin a drain was found, but at some point it was blocked by a large square stone, a plaster layer covered the stone and created a frame for the basin, in that way it was still usable, though in a very diminished form, and without the possibility of drainage. When the basin and threshold were removed a tile floor revealed.

This consisted of eight large square tiles laid in two courses. After removing the tiles the hypocaust pillars appeared directly below. This may indicate that the tiles were part of the original *suspensura* above the hypocaust, and that they were removed in order to fill up the hypocaust and thereafter put back in place. The floor underneath the *pilae* is very different compared to the floors in the rest of the hypocaust. Firstly it consists of much smaller tiles and secondly these are laid out diagonally to the rest of the room, contrary to the floors in the other hypocaust rooms, which are aligned with the defining walls.

At some point the room was reduced in size because, in its current state, one of the arches that connected the rooms in Sectors A and E became blocked, leaving only two functioning (**Fig. 14**). Furthermore, the room was truncated on the east; where a wall was built running parallel to the existing wall. The reasons for this reduction in size are, so far, unknown.

Sector F

Sector F is situated in the northernmost part of MO/1 north of the east-west wall of the bathhouse (**Fig. 11F**). So far the work in this area has focussed on the easternmost and the westernmost part. The most noteworthy architectural find in this area comprises parts of the sewage system, sections of which have been excavated in both the eastern and western parts.

The excavation of the eastern part of Sector F has revealed a small section of the city's sewage



14. Arched vents connecting the hypocaust rooms of Sectors A and E (the fill in the vents has been retained to support the arches).

system (**Fig. 15**). Two drains were uncovered, one running east-west against the east-west bath wall and the other, a later addition, running north-south and connecting to the first. Both drains are constructed from limestone blocks with cement bottoms. The east-west drain has been identified in both the eastern and western part of MO/1, where it continues into the baulks. Large stone slabs, still *in situ* in the centre of Sector F, were originally used to cover the drain. The excavation of the east-west drain revealed several interesting issues. Firstly, it was discovered that several large stones were deliberately placed in order to block the drain at the junction with the north-south drain. This could indicate that the east-west drain went out of use at the same time as the north-south drain was constructed. Furthermore, the excavation revealed that the east-west drain was completely blocked by a wall at its easternmost visible end. The top of this wall is at the same level as a paving, consisting of plaster and fist size stones, which was constructed between the two drains and the wall. Obviously this wall was constructed at a time when the east-west running drain was no longer in use and most likely after the north-south running drain replaced the first. Finally, the east-west running drain was filled up in one event, according to the finds from the filling.

The construction of the north-south running drain differs from the construction of the original drain, which is both wider and almost one metre deeper. Furthermore, the north-south drain produced some very interesting finds. Near the bottom of the drain, numerous potsherds, nails, coins, beads and rings were found, seemingly not part of the filling but naturally deposited,

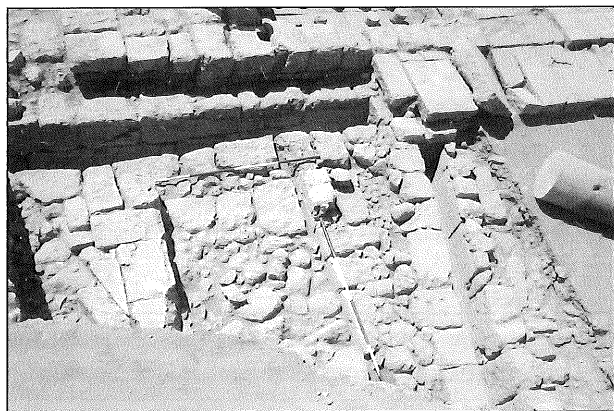
which means that they were washed into the drain at some point.

The excavation of the western part of Sector F also revealed interesting issues, both architecturally and in the way of finds. Firstly, as stated above, the east-west running drain was also uncovered in this part of Sector F. The excavation revealed that it was at some point markedly modified. The western part was blocked with large stones while in the eastern part the floor was raised to the same height as the north-south running drain. Furthermore, the finds in the fill in the eastern section of the drain were identical with the filling in the north-south drain, clearly indicating that the two parts were filled simultaneously. Likewise, the finds in the raised section of the east-west drain matched those in the north-south drain.

As described earlier, a basin was located in the north-western corner of Sector C. From the northwest corner of this basin, an outlet led into the raised (western) part of the east-west drain. Deposited in the outlet as it flowed into the drain was a thick, multi-layered lime deposit, similar to that found inside the northern wall of the basin. The discoveries in the drain and basin clearly indicate that the northern part of MO/1 stopped functioning as a bathhouse and supported instead some sort of industry in the last period of use, a change of use noted at other sites in late, such as Baysan/Scythopolis (Tsafirir and Foerster 1997).

Summary

So far it has been stated that several construction and repair phases are present in the bathhouse. From the archaeological information recovered so far it can be suggested that the original construction of the bathhouse consisted of the two central walls and rooms in Sectors A, B and C. Due to the position of the room in Sector D it would be most likely that this was also part of the original bathhouse, but if this is the case it must have gone through a total rebuild at some point. This assumption is based on the current state of preservation of Sector D compared to the decay in Sectors A, B and C. Furthermore, the east-west drain in Sector F must, necessarily, be part of this first construction phase. At some point the northern part of the bathhouse went out of use, documented by the simultaneous filling



15. Stone-lined drains in Sector F of MO/1.

of Sectors B and C (and probably also D) while the room of Sector A was still in use. The filling of Sector C disabled the system that drafted the hot air through the hypocaust; therefore, a new draft had to be created. This was achieved by inserting four columns with *tubuli* on three sides, which were connected to one or more chimneys. These were all inserted around the room of Sector A, at the same time the Sector E room was built; but why this was later reduced in size is uncertain. Lastly, Sector E's room went out of use and a basin was constructed over it.

So far it has not been possible to differentiate between the caldarium and the tepidarium (if any) in the bathhouse; furthermore, the frigidarium or lounge-apodyteum has not been uncovered.

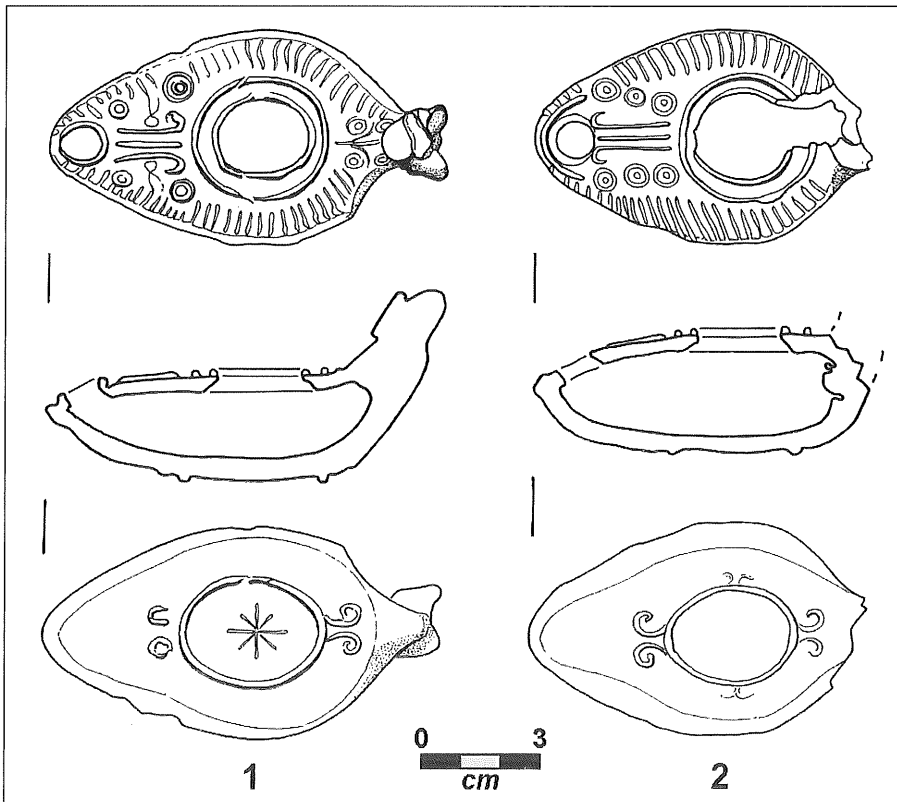
A major objective in future seasons is to locate the bathhouse furnace, which is most likely situated to the south of Sector A. Furthermore, the western part of Sector F needs additional examination. Moreover, the connection between the bathhouse and the surrounding excavated architecture needs to be established, which will be attempted by making strip trenches to the north and east.

Finds from the Excavations (MLS and AW)

Ceramic Oil Lamps

A complete ceramic oil lamp (IJP-PCN 1, **Fig. 16.1**) and a nearly complete lamp, missing only the handle (IJP-PCN 2, **Fig. 16.2**), were recovered in the 2002 season from unstratified topsoil and an in-filling deposit of the Byzantine bathhouse respectively. Other oil lamp fragments were recovered from the mosque excavation.

All the oil lamp specimens belong to the well-known Jarash lamp type. Lamps IJP-PCN 1 and IJP-PCN 2 are tear-drop shaped with a central filler hole in the top and a wick hole at the pointed end, made in a mould in two halves and joined at the outer edges. The decoration on the top part of both lamps consists of three straight parallel lines between the wick nozzle and the filler hole. The outer two lines end in hooks at the filler hole. Three dotted circles flank the three lines and striations are running around the upper edge of the lamps top. At the wider end of Lamp IJP-PCN 1 is a tall arched handle with a finger-moulded top, finished off by pinching, which make it look zoomorphic. The base of both lamps has a round ringed foot,



16. Two 'Jarash Lamps' from the mosque excavations. 1. IJP-PCN 1; 2. IJP-PCN 2 (drawings by Judith Sellers).

consisting of a centrally placed large open circle with two outward facing hooks on the long axis of the lamp. Lamp IJP-PCN 1 has an asterisk in the centre of the circle.

The typological and stylistic characteristics of Lamp IJP-PCN 1 suggest it belongs to the Zoomorphic handle variant of the Jarash lamp types. Similar decorated lamps of the Zoomorphic handle variant have been dated from between the first half of the seventh century to the middle of the eighth century (Scholl 1986: 163). Similar lamp types have been found at Jarash in deposits dated to the late Byzantine and early Islamic period, for instance at the Hippodrome (Kehrberg 1989: 89, fig. 5.25), in the area of the North Decumanus (Kehrberg in Ball *et al.* 1986: 367 pl. V.20) and in the cistern of the Zeus temple (Rasson in Seigne 1989: 146 fig.14.2). Kilns and moulds for the production of these oil lamp types have been found at Jarash on the terrace of the Artemis temple (Pierobon 1983-1984: 95).

Ceramic Tiles

During the excavation seasons 2002-2004 a large volume of roof tile fragments, amounting to over five tonnes, was recovered during excavation, the majority of which consisted of building material from the destroyed mosque. The two types of roof tiles are the *tegulae*, a flat slab with flanged rims on the two long sides, and the *imbrex*, a curved semi-circular tile intended for covering the seam between two tegulae. Further analyse will result in the division of these two broad types into sub-groups.

Excavation of the bathhouse recovered a large number of tiles, notably *tegulae*, square tiles and circular hypocaust tiles (*pilae*), as noted earlier in this report. These tiles were used in the construction of the hypocaust system, the arches in the hypocaust system and stacked to support the floor of the bathhouse. Furthermore, the floors and walls were covered with ceramic tiles.

The excavation of the Church of Bishop Isaiah at Jarash, west of North Theatre, has revealed similar roof tiles, both the *tegulae* and *imbrices*, in the destruction layer of the church dated to the earthquake of 749AD (Clark *et al.* 1986: 313). The *tegulae* of the church were of a gritty dark ware, made in moulds, and they often had a wavy finger impression on the surface and are similar to the ones recovered at the mosque

(Clark *et al.* 1986: 317 pls. X.19, XIV.28). Similar roof tiles have been found elsewhere in Jordan and Palestine, like at Umm Qays where both *tegulae* and *imbrices* were recovered on the terrace (Area I and III) by the church and the basilica, which both presumably were destroyed at the 749 earthquake (Vriezen and Mulder 1997: 323).

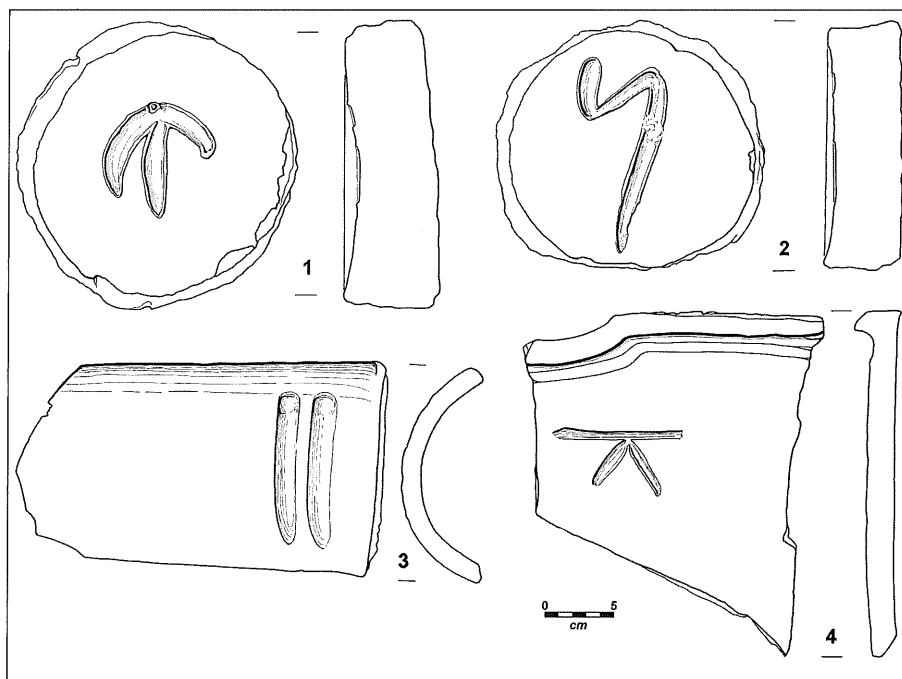
Some of the roof tile fragments of the mosque, along with construction tiles from the bathhouse, are incised with potters' marks. The marks include wavy finger impressions, crosses, straight lines and incised Greek letters (Fig. 17). The marks are similar to those found on tiles from the Civic Complex church in Area IX at Pella, also dated to before the earthquake of 749AD (Smith and Day 1989: pl. 28.A-C). Like at Jarash, the tiles recovered from the church at Pella were found in fragments, which could indicate that the complete tiles were carried away after the destruction of the church for reuse (Smith and Day 1989: 40).

A large reduction kiln for production of these roof tiles has been discovered at Jarash in the area of the North Theatre. These kilns are dated to the early Islamic period, specifically the eighth century (Schaefer and Falkner 1986: 429).

Coins

During the 2002 to 2004 seasons, a total of 579 coins were found during the course of the excavation, 432 of which were recovered from the area of the bathhouse (MO/1). All but one, which was silver, were copper alloy issues. Many of these coins, indeed the majority, were small coppers, often 12 millimetres in diameter or less. These are the ubiquitous AE4 Roman type, not only common at Jarash but also other classical sites in the Middle East, for instance Pella (Carson in Sheedy *et al.* 2001: 33-37). Often severely worn through an extended period of circulation and badly corroded, due to soil conditions, these coins are usually difficult to identify and can only be roughly attributed to the fourth and fifth centuries.

Better preserved and often identifiable after cleaning, are the coins of the sixth to eighth centuries, belonging to the three broad categories of early Byzantine, Arab-Byzantine (pre-Reform Islamic) and post-reform Islamic issues that typified the period (Fig. 18). The predominance of



17. Potters' marks on tiles from the bathhouse (1, 2, 4) and mosque (3) (drawings by Judith Sellers).

Justin II and Sophia folles among the Byzantine coins, already noted at Jarash, Pella and other north Jordan sites (Walmsley 1999), continues with the IJP coin corpus, as do the local imitations of these minted in Scythopolis/Baysan and Gerasa/Jarash itself, produced ca. 660-680 (Album and Goodwin 2002: 81-91; Foss 2004: 760 – Foss' date is preferable). Post-reform coppers include a good specimen from the mint at Ṭabariyya, the capital city of the Jund al-Urdunn, featuring a palm tree on the reverse (**Fig. 18.3**). Images of animals also occur on the reverse of Ṭabariyya coins, including lions and birds (possibly an eagle), the symbolism of which are yet to be explained.

To date, coins dating to the pre-reform Islamic series have been found in the fills of the bathhouse that underlie the mosque, whereas post-reform issues mostly come from levels above the mosque. The exception is two post-reform coins in MO/3, which seem to belong to constructional fill levels for the mosque. Preliminarily, therefore, the numismatic evidence confirms a construction date for the mosque after the coinage reforms of Abd al-Malik at the end of the seventh century, and probably some decades into the first half of the eighth century.

Area GO: first investigations in the zone west of the mosque (KD)

From the outset of the Islamic Jarash Proj-

ect, it seemed quite likely that the area immediately west of Area MO should contain significant structural remains contemporary with the mosque. Nevertheless, it was not until the 2004 season that this area was explored to any extent. The first major task was to clear the area of growth, at least two large spoil heaps and a substantial layer of very recent topsoil, in some places around a metre thick. At least two of the later identified architectural features (Walls 1, 3) were visible before any work was commenced in this area; however, further investigation was definitely necessary before any relationship (whether chronological or geographical) between these walls and the mosque could be established. Both visible features seemingly belonged to some form of enclosure wall, but whether this was part of an actual building or some form of perimeter walling also required further investigation. This meant that even though it was clear to us that no actual excavation of this area would take place in the 2004 season, there remained a number of issues to be explored.

During the 2004 season, most of the area termed GO was cleared and the modern, and highly contaminated, topsoil removed. The recent date of these deposits was relatively easy to establish, since it consisted mostly of the red sand not naturally occurring in this region and well known as a modern deposit, which in connection with the annual Jerash Festival is observable



18. Three coins from the mosque/bathhouse excavations at Jarash. 1. IJP-FCN 70, surface find, follis of Justin II and Sophia minted at Constantinople, officina 'B', dated to Year 12 (576/7) (Bellinger 1966: 213.42b); 2. IJP-FCN 354, MO/1.108, fals of the 'Pseudo Damascus Mint', ca. 660-680 (Album and Goodwin 2002: 87, pl. 39); 3. IJP-FCN 173, MO/3.9, fals from the mint of Ṭabariyya, undated, ca. 700-750+ (Walker 1956: 269.898).

throughout the site. Upon clearing away the modern deposits, we discovered a number of other features, mostly walls, strengthening our suspicion that one or more significant structures once stood here. From the hitherto collected evidence (i.e. aerial photos and the exposed architectural features), the possibility of substantial remains of at least two large buildings in this area; one in the northern section of GO, and one in the southern section (with a potential third structure even further west), seems quite promising.

An important factor in identifying the southern GO-structure was actually established in the south-westernmost excavation units of the mosque (MO/13, MO/14), where a narrow lane-way (ca. 2.5 metres) separating a wall parallel

to the western mosque wall, was unearthed. In conjunction with the presence of a third mihrab in the westernmost end of the *qiblah* wall, the discovery of what appears to be a discrete entranceway into the GO structure substantiates our notion that this was the palace of the local Muslim elite, and that the entire area west of the mosque was presumably reserved for high-status buildings; such as a gubernatorial residence and/or local administration.

In addition to the lane, wall and doorway uncovered in MO/13 and MO/14, a total of ten architectural features, of which four were clearly identified as actual walls, were discovered while clearing GO/0. These features can be described as follows:

<i>Feature number</i>	<i>Wall number</i>	<i>Description</i>
01	01	A series of worked ashlar running N-S in the north-easternmost section of GO/0 (planned).
02	02	A series of worked ashlar running approximately E-W in NE section of GO/0 (planned).
03		2 worked stone ashlar, which are seemingly laid as a corner between two walls. Remain unexcavated and unplanned.
04		Stone tumble, possibly deriving from the collapse of Wall 4 (unplanned).
05	04	A series of worked stones running NW-SE in the SW section of GO/0 (planned).
06		Stone tumble running E-W along the west end of the north edge of GO/0 (sketch-planned)
07		A line of three stones crossing the presumed path of Wall 1. Only further excavation will be able to determine whether this feature is connected to Wall 1 or is an independent feature/wall. (East GO/0).
08		A seemingly semi-circular installation that may be a doorjamb. Located in eastern GO/0, directly across from the doorway identified in the eastern mosque wall. This could possibly be another entrance into one of the buildings in the GO area, and may be related to features 7 and 9.
09		A horizontally placed column drum positioned against an upright standing flagstone on either side, and seemingly set in a mortar foundation.
10	03	A row of five worked stones extending E-W along the southern slope of the southern Decumanus. Partially visible before the 2004 season commenced, this feature is tentatively suggested to constitute the remains of a perimeter wall separating the compound/complex in the GO area from the public space of the Decumanus.

The clearing of the GO area did not yield very many significant finds. Among those worth mentioning are four unidentified coins, a polished stone bead with drill hole and a pierced piece of mother of pearl. Furthermore, a large number of ceramic sherds; including a lamp fragment with an Arabic inscription, considerable faunal remains (bones) and some pieces of ancient glass were retrieved.

Observations Concerning the Street Surfaces in Jarash (HB)

Both the *via Decumanus* and *via Cardo* have been completely excavated by various excavators over the past 80 years, some almost as clearance work in which no records were kept and others as recorded excavations. As is usual with excavation records it is mainly those things which failed to be recorded, or which were deemed as of no interest at the time, which are now posing problems in their absence.

The following observations, although worth making, are based only on the construction and condition of the Roman road surfaces of the *via Cardo* and *via Decumanus* currently being recorded in detail by the Islamic Jarash Project, so as to place the mosque, and surrounding buildings, within their urban context. Unfortunately, no stratigraphic evidence can now be brought to bear on these theories, since the later deposits, including walls and other structures, have already been completely removed. They are thus, in most cases, only being put forward as unverifiable theories, although they may well have been voiced or considered by previous archaeologists.

The Mosque

The mosque is situated at the south west corner of the crossing of the *via Cardo* and *via Decumanus* where *Tetrakonia* occupy the centre of the circular crossroads. As already noted, the mosque has frontages which are not oriented exactly on the lines of either street.

The exterior wall surrounding the courtyard, where it faces the *via Decumanus*, has a doorway whose sill is some 1.5 metres above the Roman street surface, with a drain outlet to the west slightly above the level of the door sill. The area between this wall and the Roman street is unfortunately already excavated to the level of the Roman colonnade stylobate. Several entablature

blocks are visible, used (along with packed earth and other stones) to act as foundations for the deposits which must have formed the path to the door. Due to the door sill and the slightly higher drain outlet, it seems as though there was a platform running the length of the building, and rising to the west to cover the drain outside the mosque. This platform would have extended over the broken bases of the columns and out into the street. This and the drain trench fill (see below) suggest that the street in use during the Islamic period was considerably narrower than the Roman paved street now visible. The only possible evidence of how far it extended is a post hole block set into the runnel which surrounds the circular junction of the *via Cardo* and *via Decumanus*. This block is six centimetres above the street surface and makes the runnel useless for rainwater runoff. It is certainly later than the Roman street and may possibly mark the corner of the platform which would have projected in front of the courtyard wall. It would have left the covers of the street drain (which was obviously still in use) in and not very far below the Islamic street surface. Given the orientation of the mosque it is more than likely that the Islamic street was oriented on the courtyard wall, maintaining a roughly parallel course, thus running slightly across the line of the Roman road. As the length of the road would have run between the surviving columns, this would have meant that the street not a straight line, unlike the typical Roman street. This is consistent with the Middle Age practice, of making buildings rather than thoroughfares the defining elements in town planning.

Via Cardo

This street, heavily worn and damaged prior to excavation (very much more heavily damaged than the *via Decumanus*), shows signs of deep rutting, caused by the transport of heavy goods on carts with a uniform axle width of ca. 1.48 metres. The weight of the loads, the uniformity of axle width, the almost identical route taken by the carts and the fact that it all occurred after the street surface ceased to be maintained suggest that this was not due to normal daily traffic of a city. These ruts extend from the Oval piazza to the North gate, through which they turn uphill to the west, with some detours along the way to the north theatre and eastwards down

the street opposite it. Despite similar ruts on the steps of the bridge crossing the wadi on the via Decumanus, there are only comparatively faint signs of similar rutting on the surface of the via Decumanus itself. Starting at the South gate there are similar ruts on the block forming the sill. The ground from here to the Piazza has been too heavily disturbed to leave any traces. The ruts appear only very faintly across the surface of the Piazza leading from the temple of Jupiter to the via Cardo (suggesting that there existed another surface above the stonework when the transportation took place) but suddenly become very deep and pronounced when they enter the via Cardo. Here the route of the ruts divides, one entering a large area of collapsed drain (which has since been restored in order to create a surface for visitors) the other clearly avoiding this area by passing on to the other side of the street. The ruts run over a space in the centre of the via Cardo leading into the crossroads with the via Decumanus, which once obviously held a street dividing post. This has been removed and neatly filled which was therefore done when the street surface was still being maintained. In general they follow a course which leaves the central drain between the wheel ruts, though in some areas they appear to be avoiding collapsed drains, obstacles or insecure ground. The ruts also vary greatly in depth along the length of the street. At the south end of the via Cardo and at the north gate they are worn up to six centimetres deep into the solid stone blocks and yet almost disappear between the crossing to the north theatre and the north gate, an area thought to be little used in the later periods. As the rutting becomes only gradually less pronounced rather than abruptly (as would be the case with a repair) this would seem to be due to some other deposit being present on the road surface such as mud or silt, debris or rubbish. This traffic appears to have caused a great deal of damage to the road surface which was not repaired.

Both the discontinuity of the depth of the ruts (which suggests deposits being present on the street surface which protected the stone blocks) and the amount of unrepaired damage suggest a period some time after the surface had continued to be maintained. This traffic could thus, at least partially, have been the removal of the stonework from the temple of Jupiter and its

transportation along the via Cardo and out of the north gate, turning up the hill and through an entrance in the west city wall (the newly excavated west gate does not show signs of such heavy traffic), to be used as building material for the ecclesiastical complex containing the Church of St. John the Baptist, for instance (Welles 1938: 376-78). Other stone robbery, done on a lesser scale, must have taken place in the city and the fainter ruts on the via Decumanus could be the result of this.

The Via Decumanus

In Jarash, unlike in the traditional Roman city plan, this street does not, at the moment, appear to extend all the way to the west gate. What is at present visible, was mostly cleared in unrecorded clearance of surface deposits. All the less substantial street surfaces which would have existed were removed and the Roman, stone paved street surface left undocumented. It rises gradually from the Tetrastadion towards the west.

During clearance work, due to the construction of later buildings along the sides of the street, they were unable in some cases to find a clear edge to the paving and when they came across large entablature blocks lying along the edges of the street they appear to have left these relatively in place. It is possible that they pushed to one side some of these blocks from the street surface itself, but the blocks may also be parts of later raised platforms outside buildings, as is the case in front of the mosque. The pillars now standing on the edge of the mosque are reconstructions and would not have been present when the mosque was in use. Although this may be true for other Byzantine/Islamic buildings along the street, there are some columns which are still in their original position, although broken and some on the north side of the street still bearing their entablature blocks.

During the season the west end of the via Decumanus, from the crossroads to the end of the clearance work (ca. 63 metres), and the via Cardo in front of the mosque site (ca. 30 metres) were drawn at a scale of 1:50. These slightly overlap and verify the partial drawing of the paving of the crossroads published in Kraeling (1938). It appears to have remained in fairly good condition since its excavation, despite repair work which lifted some of the stones from the partial-

ly collapsed drain and cemented them in place to create a walkable surface for visitors.

The stones are generally laid in rows at a slight angle to the colonnades. For ca. 25 metres at the west end of the street, the paving blocks immediately in front of the columns on the side of the street are not present, whether this was part of the initial construction, or whether they have later been removed is impossible to say. It was suggested that they may be where statuary has been removed or they may have been for plants climbing the columns.

There are a series of drain covers, circular blocks, which are constructed into the paving pattern and are thus probably contemporary, providing an entry to the drain running down the middle of the street. Two 'new' inlet drains from buildings on the south side of the via Decumanus clearly break the pattern of the paving and are thus considered to be from a later period. One of these leads from the mosque, the replaced paving stones being rather haphazardly packed into the construction ditch, not covering the complete area and unlevelled, indicating that the paving stones in this area were probably not being used as the street surface at the time (see above). The drain entry into the outside wall of the mosque is visible and is some six metres distant from and at least two metres higher than the drain itself. The second 'new' inlet leads to an as yet unexcavated area to the west near the end of the via Decumanus.

Significance and Implications of the Excavations (AW)

The highly visual construction of a large congregational mosque at the central crossroads of Jarash brought it into line with an established Islamic urban tradition of the Umayyad eighth century. A strategically placed mosque became one of the defining features of civic life under the Marwānid Umayyads, as most clearly seen in the new towns of 'Anjar in Lebanon, Ayla (al-'Aqaba) in Jordan and ar-Ramla in Palestine. The recent work at Jarash demonstrates that existing towns were also reconfigured on a large scale to meet new requirements, with new buildings being sympathetically accommodated within the prevailing urban plan. Nonetheless, the insertion of a mosque at Jarash would have resulted in significant upheaval to the late an-

tique town – both physically and socially – and which would have made quite clear the growing permanency of Islamic rule in the local district, more broadly in the Jund al-Urdunn, and Bilād ash-Shām generally.

The erection of a mosque at Jarash was only one part of a wider program of urban renewal in Bilād ash-Shām initiated by the Marwānids. The new town of 'Anjar was very much part of that program, as was the market complex at Baysān and, on a grander scale, the 'Ammān Citadel development featuring a huge governor's palace, a market square and a mosque. At Jarash, the construction of the mosque was accompanied, as it would seem, by the total redevelopment of the south decumanus, which thereafter functioned as the principal thoroughfare for the early Islamic town. Apart from the mosque at the cardo junction, a line of other public buildings flanked the decumanus including, possibly, an administration building next to the mosque and an extensive market place (*sūq*). Many of these buildings await full investigation, an exciting prospect for future seasons, that will be devoted to the exploration of Islamic Jarash in all its facets.

Hugh Barnes

Louise Blanke louiseblanke@yahoo.dk

Kristoffer Damgaard kristofferdamgaard@hotmail.com

Ian Simpson iansi@m3.stud.ku.dk

Mette Low Sørensen mette@low.dk

Alan Walmsley walmsley@hum.ku.dk

The Carsten Niebuhr Institute for Near Eastern Studies,

University of Copenhagen

Bibliography

Album, S. and Goodwin, T.

2002 *Sylloge of Islamic Coins in the Ashmolean. Volume 1: The Pre-reform Coinage of the Early Islamic Period*. Oxford: Ashmolean Museum.

Ball, W., Bowsher, J., Kehrberg, I., Walmsley, A. and Watson, P.

1986 The North Decumanus and North Tetrastyle at Jerash: An Archaeological and Architectural Report. Pp. 351-409 in F. Zayadine (ed.), *Jerash Archaeological Project 1, 1981-1983*. Amman: Department of Antiquities.

Bellinger, A. R.

1966 *Catalogue of the Byzantine Coins in the Dum-*

- barton Oaks Collection and in the Whittemore Collection. Volume One: Anastasius I to Maurice, 491–602. Washington DC: Dumbarton Oaks.
- Bloom, J. M.
1989 *Minaret, Symbol of Islam*. Oxford Studies in Islamic Art 7. Oxford: Oxford University Press.
- Bowersock, G. W., Brown, P. R. L. and Grabar, O.
1999 *Late Antiquity: a guide to the postclassical world*. Cambridge, Mass: Harvard University Press.
- Clark, V. A., Bowsher, J. M. C. and Stewart, J. D.
1986 The Jerash North Theatre. Architecture and Archaeology 1982-1983. Pp. 205-302 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981–1983*. Amman: Department of Antiquities.
- Foss, C.
2004 The Coinage of the First Century of Islam (review of Stephen Album and Tony Goodwin, *Sylloge of Islamic Coins in the Ashmolean Museum*, volume 1: *The Pre-Reform Coinage of the Early Islamic Period* (Ashmolean Museum, Oxford 2002)). *Journal of Roman Archaeology* 17.2: 748-760.
- Gawlikowski, M.
1986 A Residential Area by the South Decumanus. Pp. 107-36 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981–1983*. Amman: Department of Antiquities.
1997 The Oriental City and the Advent of Islam. Pp. 339-350 in *Die Orientalische Stadt: kontinuierität, Wandel, Bruch, Internationales Colloquium der Deutschen Orient-Gesellschaft 9-10. Mai 1996*. Halle/Saale: Saarbrücker Druckerei und Verlag.
- Harding, L.
1949 Recent Work on the Jerash Forum. *Palestine Exploration Quarterly* 81: 12-20.
- Kehrberg, I.
1989 Selected Lamps and Pottery from the Hippodrome at Jerash. *Syria* 66: 85-97.
- Kennedy, H.
1999 Islam. Pp. 219-237 in G. W. Bowersock, P. Brown and O. Grabar (eds.), *Late Antiquity. A Guide to the Postclassical World*. Cambridge, Mass: Harvard University Press.
- Khamis, E.
2001 Two wall mosaic inscriptions from the Umayyad market place in Bet Shean/Baysan. *Bulletin of the School of Oriental and African Studies* 64(2): 159-176.
- Kraeling, C. H.
1938 Roman Buildings III. The South Tetrastyle. Pp. 103-115 in C. H. Kraeling (ed.), *Gerasa, City of the Decapolis*. New Haven: American Schools of Oriental Research.
- Liebeschuetz, W.
2000 Late Antiquity (6th and 7th centuries) in the cities of the Roman Near East. *Mediterraneo Antico* 3(1): 43-75.
- Naghawi, A.
1982 An Umayyad Mosque at Jerash (Arabic). *ADAJ* 26: 20-22.
1989 Umayyad Filices Minted at Jerash. Pp. 219-22 in F. Zayadine (ed.), *Jerash Archaeological Project 2 (1984-1988)*. Paris: Paul Geuthner.
- Northedge, A.
1989 The Umayyad Mosque of 'Amman. Pp. 140-63 in M. A. Bakhit and R. Schick (eds.), *Proceedings of the Third Symposium, the Fourth International Conference on the History of Bilad al-Sham. Bilad al-Sham during the Umayyad Period (English Section, Vol. 2)*. Amman: History of Bilad al-Sham Committee.
1992 *Studies on Roman and Islamic Amman, Volume 1. The Excavations of Mrs C-M Bennett and Other Investigations*. British Academy Monographs in Archaeology 3. Oxford: British Institute at Amman for Archaeology and History/Oxford University Press.
1999 Archaeology and Islam. Pp. 1077-1106 in G. Barker (ed.), *Companion Encyclopedia of Archaeology*. London: Routledge.
- Pierobon, R.
1983-1984 Gerasa I. Report of the Italian Archaeological Expedition to Jerash, Campaigns 1977-1981. Sanctuary of Artemis: Soundings in the Temple-Terrace, 1978-1980. *Mesopotamia* 18-19: 85-111.
- Sack, D.
1996 *Die Große Moschee von Resafa - Rusafat Hišam*. Resafa IV / Deutsches Archäologisches Institut. Mainz: Philipp von Zabern.
- Schaefer, J. and Falkner, R. K.
1986 An Umayyad Potters' Complex in the North Theatre, Jerash. 1981-83. Pp. 411-35 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981–1983*. Amman: Department of Antiquities.
- Scholl, T.
1986 The Chronology of Jerash Lamps. A Preliminary Report. Pp. 163-66 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981–1983*. Amman: Department of Antiquities.
- Seigne, J.
1989 Jerash - The Sanctuary of Zeus. Pp. 319-323 in D. Homès-Fredericq and J. B. Hennessy (eds.), *Archaeology of Jordan III. Field Reports: Surveys & Sites A-K*. Akkadica Supplementum. Leuven: Peeters.

Sheedy, K. A., Carson, R. A. G., Walmsley, A., Da Costa, K. and Hennessy, J. B.

2001 *Pella in Jordan 1979-1990: the coins*. Adapa monograph series; no. 1. Sydney: Adapa.

Smith, R. H. and Day, L. P.

1989 *Pella of the Decapolis Volume 2. Final Report on the College of Wooster Excavations in Area IX, the Civic Complex, 1979-1985*. Wooster, Oh: College of Wooster.

Tsafrir, Y. and Foerster, G.

1997 Urbanism at Scythopolis-Bet Shean in the Fourth to Seventh Centuries. *Dumbarton Oaks Papers* 51: 85-146.

Vriezen, K. J. H. and Mulder, N. F.

1997 Umm Qays: the Byzantine Buildings on the Terrace. The Building Materials of Stone and Ceramics. Pp. 323-330 in G. Bisheh, M. Za-ghloul and I. Kehrberg (eds.), *Studies in the History and Archaeology of Jordan VI: Landscape Resources and Human Occupation in Jordan*

Throughout the Ages. Amman: Department of Antiquities of Jordan.

Walker, J.

1956 *Catalogue of the Muhammadan Coins in the British Museum, Volume 2. Catalogue of the Arab-Byzantine and Post Reform Umayyad Coins*. London: British Museum.

Walmsley, A.

1999 Coin Frequencies in Sixth and Seventh Century Palestine and Arabia: social and economic implications. *Journal of the Economic and Social History of the Orient* 42(3): 324-50.

2003 The Friday Mosque of Early Islamic Jarash in Jordan: The 2002 field season of the Danish-Jordanian Islamic Jarash Project. *Journal of the C. L. David Collection* 1: 110-131.

Welles, C. B.

1938 The Inscriptions. Pp. 355-494 in C. H. Kraeling (ed.), *Gerasa, City of the Decapolis*. New Haven: American Schools of Oriental Research.