Roberto Parapetti
Centro Ricerche Archeologiche e Scavi di Torino
Via G. Ferrari, 1
10124, Torino
Italy

Roberto Parapetti

Public Building Design and Techniques in Roman Imperial Times: Achievements in Gerasa

Two well known dedicatory inscriptions provoke speculations, once again, on the Gerasa city plan. The first inscription gives reason to ascribe the responsibility of a new urban organization to the policy of Trajan: the emperor is clearly indicated as the founder of the city in the double text on the panels of the North Gate (Welles 1938: Inscr. 56-57; dated AD 115; see also Parapetti 1983-84: 62).

On entering the city through the North Gate, the plan introduces the main colonnaded thoroughfare, oriented northeast-southwest, perfectly focused on the Zeus temple. This is crossed by two transversal streets, also colonnaded, and marked at the cross points by two tetrapyla in accordance with the standard of urban planning of the same period and under the same patronage in most cities of the Roman East, above all in Apamea and Antioch.[1]

The other inscription, fifteen years later, on the "Triumphal Arch" (Welles 1938: Inscr. 58, dated AD 130) is dedicated to Hadrian, apparently to commemorate the emperor's visit to Gerasa.

On entering the city from the side of the "Triumphal Arch", the point of view is focused exactly at the Artemis Temple;[2] to the left, the Hippodrome follows in the same direction. This latter orientation, in keeping with the geographic north, can also be recognized elsewhere, mainly in the layout of the Circassian town east of the wadi, seen in the earliest aerial photographs (FIG. 1). The Circassian community, which settled on the site in the second half of the 19th century, obviously took advantage of the still standing structures, then following the pre-existing orthogonal layout.

These two distinct orientations, associated with the two principal shrines of the city, suggest a cultic bipolarity (Zeus-Artemis) which might have underlain the growth and development of Gerasa as a synoikistic phenomenon based on the unification of two distinct settlements connected with the two ancestral sanctuaries (Pierobon 1983-84: 32).

The sanctuary of Zeus is documented to have undergone numerous changes from the earliest *naos* dated back to the turn of the second century BC, to the octastyle temple on the upper terrace in AD 166. As for the present form of the sanctuary of the Artemis complex, it is known to have been built during the period from AD 150 to 160. A previous shrine must have already existed in AD 75 — judging by epigraphic sources — however, so far, nothing earlier than the second century has come to light.

As to when the unification of the two original settlements could have taken place, the actual urban configuration seems not to precede the beginning of the second century AD, under Trajan. Only the existing main thoroughfare layout, yet to be precisely dated, could be traced to earlier times. However, the ionic colonnade flanking it near the North Tetrapylon was realized around the turn of the second century AD (Ball 1986: 386). The Southern Transversal Street, on the other hand, was not traced before AD 170 (Gawlikowsky 1986: 109). Moreover, the stretch of the defensive wall immediately west of the South Gate was never built before the turn of the fourth century AD (Seigne 1986: 55).[3]

The two cities were razed to the ground in AD 115, by the tremendous earthquake that struck all of northern Syria. According to epigraphic sources, Trajan, being in Antioch during the event, decided on the immediate reconstruction of the city. In Apamea, soon after that date, the new city was planned starting from its northern end, above the complete leveling of the ruins. No stratigraphical evidence earlier than the second century AD (apart from the theatre) has been identified so far by the Belgian expedition working there, making evident the originality of the plan, of which a pre-existing "Hellenistic" layout cannot, then, be affirmed.

Of historical interest, beyond the present theme, is the relation of the enormous importance of the Artemis shrine in Gerasa's town planning and the direct imperial intervention towards that specific cult. In this respect it should be observed that no coins earlier than Hadrian — known so far — refer to Artemis as "Tyche Gerason" (Pierobon 1983-84: 33).

3 This discovery is of such importance that new excavations along the city walls should be planned, especially in connection with the Northwestern Gate, which according to the inscription mentioned above refers to the Artemis cult. If the late dating of the wall is to be confirmed, the hypothesis of the gate being a "propylaeum" of the earlier Artemision, only later inserted into the wall enclosure, can be put forward, while the possibility of a translocation of the monument appears extremely distant.

1. Aerial photograph of Jarash, R.A.F. 1926: 1: Zeus Temple, 2: Artemis Temple, 3: Hippodrome, 4: North Tetrapylon, 5: South Tetrapylon, 6: North Gate, 7: South Gate, 8: Triumphal Arch.

Such a diachronic reconstruction implies that we should consider a revision of the belief that city walls and street systems were already inextricably linked together in the second half of the first century (Kraeling 1938: 41ff). This was mainly based on the association of the alignment of the Northern Transversal Street with the Northwestern Gate, dated to AD 75-76 by the inscription on its flat arch (Welles 1938: Inscr. 50).

The puzzling question of the presence a necropolis within the city walls, not far from the Artemis Temple — against Roman burial law — used till at least the end of the first century, can be explained: Gerasa, having no physical boundary till the fourth century AD, should have been developed as an open city.[4]

Another intriguing question in the town planning of Gerasa is the relationship of the "Triumphal Arch" to the project of the city's extension to the south as a Hadrianic initiative, which was apparently realized only by the construction of the Hippodrome (Ostrasz 1991: 240). The Hadrianic plan was very likely much larger; it foresaw new quarters — mainly east of the wadi — as shown above, with the street network oriented parallel to the visual axis of the Triumphal Arch-Artemis Temple. Consequently, the opening of the Southern Transversal Street, as well as the Via Sacra of the Artemision — both served by bridges — provided the connection to the eastern sector of the city only after that project.

The Triumphal Arch, or more appropriately the *South Gate*, and the North Gate, therefore, should be seen as a means to monumentalize the southern and the northern beginnings of the urban thoroughfare. The so called "South Gate" can be assumed, instead, to have been actually built in connection with the latest remodeling of the Sanctuary of Zeus, as its "propylaeum".

Within the building achievements that followed the Trajanic and the succeeding Hadrianic masterplans, the topographic and altimetric location of the principal cultic poles — the second Olympeion and the second Artemision — in replanning the two old fashioned building complexes by the Antonines, was chosen exactly in keeping with the directions fixed by the North Gate and the *South Gate*/Triumphal Arch. It should also be noted that the springing level of the Antonine Temple of Zeus coincides with the observer's horizon from the North Gate, and that its deviation from orthogonality with the view point suggests the differing layout of the older sanctuary. Similarly, from the South Gate the deviated orientation of the Temple of Artemis points to its "other" main axis on which the Via Sacra is based.

What has been so far discussed has to be ascribed to an urban model, developed without discontinuity and with an extraordinary fortune, both in space and time, up to the latest Roman town planning achievements. The model coincides with the diffusion of the Hellenistic culture and its absorption by Rome. Such a diffusion witnesses the vitality of the Hellenistic model which, within its political and cultural ideology, was able to integrate various cultural milieux linked by the same urban life-style.

Within this life-style, Gerasa, judging from what has been recognized so far — although lacking any knowledge of the dwelling patterns — displays all these features in their most developed form.

The dominating and most common feature is the regular orthogonal layout pattern of the town plan, which is typical of the cities built in plains. In hilly areas, many diverse solutions were adopted, based on the adjustment of the geomorphological discontinuity by regular terracing. In the latter town planning, the planner's effort was dedicated to scenographic solutions; in the former, the aim was to underline the street hierarchy.

In Gerasa both solutions were applied. Most evident is the perfect execution of the "orientative projects", which finalize the design in its legibility. The urban area is defined by the "symbolic" representation of the limit between the city itself and its municipal territory through the emphasis given to the monumental accesses.

The colonnades flanking the main streets became the most characteristic feature in North Africa, Asia Minor, Syria and Arabia, where they were commonly adopted after the beginning of the second century AD. This feature, due to its repetitive use, is a clear testimony to the grandeur and uniformity of the central power. However, the colonnades along the main streets cannot be regarded simply as an urban decorative element, they imply an original concept of the urban space, which assigns to them the role of creating an organic structural autonomy.

In Palmyra, the median section of the central colonnaded street is lined by 300 m long porticoes. Its south colonnade is formed by a row of columns of uniform module and the rhythm is only interrupted by two arches at the double entrance of the horse-shoe street around the theatre. This solution aims at the achievement of an architectural uniformity where the irregularities of the pre-existing architectural patterns could not have been otherwise integrated into the new plan.

In Apamea, the colonnades along the central *plateia* have variable modules corresponding to the different buildings that they face. The same solution is recognized in Gerasa. The brackets projecting from the column shafts of the higher module to carry the architrave of the smaller module of the colonnade, assure the continuity of the articulated design. This solution gives reason to suggest that the colonnades did not support any roofing but

[4] It is amazing how recent publications such as Gross and Torelli 1988; and Segal 1988, although quoting Gerasa town planning as a "must" of Roman-Hellenistic achievements, refer to the old publications while ignoring recent ones such as *Jerash Archaeological Project 1981-1983*, I (Amman 1986).

they formed a screen consisting of free standing columns which carried an entablature reduced only to the architrave. This can also be deduced from the lack of pertinent friezes and cornices, if it were not a mere coincidence.[5]

In other words, the colonnades — having lost their original function as porticoes due to repetitive use — became a kind of "wall" enclosing the street, which got transformed from an open to an "enveloped space", therefore planned as an architectural entity and conceived as autonomous.

Tetrapyla, tetrakionia and quadrifrons arches can very often be seen along colonnaded streets of varying cultural milieux, also to lead to the materialization of orientative projects. The over-sized isolated columns at the two crossing points, which divide the main section of the central *plateia* of Apamea in three parts, are on the contrary a rare adaptation of the theme.

In Palmyra, the main axis of the Diocletianic Camp is exactly oriented with the visual continuation of the central stretch of the colonnaded street; while the propylaeum of the Sanctuary of Bel represents the focus of the other two segments of the street: the one from the Funerary Temple to the Tetrapylon, and the one from the Monumental Arch to the Bel Propylaeum.

The lighthouse at Leptis Magna focuses the point of view along the colonnaded *plateia* in the city's civic centre, remodeled by Septimius Severus, who made use of the contribution of Syrian architects and builders.

In Gerasa in particular, the task of achieving the conceptually complex urbanistic and architectural design described above, is assigned, by contrast, to simple and standardized pattern. Even upon careful observation, one cannot distinguish between the architectural decorative elements of the second and third centuries AD, neither on stylistic nor technical grounds. Furthermore, to the very standardized architectural elements and decorative patterns, a real serial production does not apply to the realization of such extended building enterprises.

In the Sanctuary of Artemis, for instance, the following should be observed: the long row of columns of the *ambulacrum* on the west side of the Main Colonnaded Street rests on pedestals. Here, one observes the absence of the plinth, in the column bases, the place of which is taken by the upper *fascia* of the pedestal itself. Such anomalies are scarcely common in Gerasa; on the contrary, antithetical solutions in the subdivision of the architectural elements in stone block mouldings are common: pedestal blocks to which are added the plinths of the Attic type base while the *scotia* with the two *tori* are cut in another stone. The same is true of the column shafts: the *imoscapus* moulding can be found either in the block of the base or in the lowest drum. Column drums of the same module (even in the same building) are never of the same height.

This neglect in the tectonic-stereotomy relationship appears at first glance to be a sign of irrational and casual organization of the building process. The phenomenon can be explained by the existence of an intermediate building stage between the quarry and the construction site; there, entire architectural elements (columns, portals, etc.) would have been brought singly to completion. In this way a serial assemblage (a row of similar columns, for instance) would have been established with the least employment of the temporary installation at the building site, by mounting the elements in sequence. Such an organization of the building process explains the "lame" architraves of the colonnades that correspond to the Macellum. It must have been practically impossible for the builders to achieve a uniform level at the top of the capitals if the columns were erected one after the other and without the continuous scaffolding. The task of bringing the facade to an acceptable orthogonal configuration was then given to the architrave. It could have been finished on the spot prior to its erection, providing it, when required, for the adaptation to the contact face with the capitals. The device is perfectly coherent to the architectural outlook as a whole: an astonishing combination of general appearance, with minimum care allocated to the planning of details.

Bibliography

Ball, W. 1986. Part B: The Architecture. Pp. 385-392 in W. Ball *et al.* The North Decumanus and North Tetrapylon at Jerash: An Archaeological and Architectural Report. In F. Zayadine (ed.), *Jerash Archaeological Project 1981-1983,* I. Amman.

Gawlikowsky, M. 1986. A Residential Area by the South Decumanus. Pp. 107-136 in F. Zayadine (ed.), *Jerash Archaeological Project 1981-1983,* I. Amman.

Gross, P. and Torelli, M. 1988. *Storia dell'Urbanistica: il mondo Romano.* Latorza.

Kraeling, C. H. (ed.) 1938. *Gerasa, City of the Decapolis.* New Haven.

Ostrasz, A. A. 1991. The Excavation and Restoration of the Hippodrome at Jerash: A Synopsis. *ADAJ* 35: 237-250.

Parapetti, P. 1983-84. Architectural and Urban Space in Gerasa. *Mesopotamia* 18-19: 37-84.

Pierobon, R. 1983-84. Gerasa in Archaeological His-

[5] Even though I do not believe it to be systematic in principle, the unusual solution (not suggested yet in the available literature) is proved in Gerasa at least in the stretch of the street overlooking the lower "West Baths". There the colonnade is actually on the brow of the terraced sidewalk, whose side limit could have been simply a balustrade (Parapetti 1983-84: 47). Additionally, the mutilated entablature, reduced at the simple architrave, is an unorthodox solution that reveals an *ante litteram* "purist" architectural approach (Parapetti 1983-84: 66).

toriography. *Mesopotamia* 18-19: 13-35.

Seigne, J. 1986. Réchérches sur le sanctuare de Zeus à Jérash (Octobre 1982-Décembre 1983): rapport préliminaire. Pp. 29-59 in F. Zayadine (ed.), *Jerash Archaeological Project 1981-1983*, I. Amman.

Segal, A. 1988. *Town Planning and Architecture in Provincia Arabia.* BAR Int. Ser. 419. Oxford.

Welles, C. B. 1938. The Inscriptions. Pp. 353-546 in C. H. Kraeling (ed.), *Gerasa, City of the Decapolis*. New Haven.