

The Nabataean House and the Urbanistic System of the Habitation Quarters in Petra

In comparison to sanctuaries, public squares, theatres and necropolises, private architecture has so far been a more or less neglected subject in Classical and Near Eastern Archaeology. In the field of private architecture one cannot expect spectacular finds of statues, reliefs or inscriptions associated with excavations of sacred or secular state architecture, which as showpieces, enhance the fame of archaeological museums. In this respect the city of Athens is a particularly good example. There we find numerous temples, the Greek and the Roman agora, the theatres and most of the necropolises excavated and published – but scarcely a dozen private houses. The same is true for most of the ancient cities in Greece and Asia Minor. Another fact is that, in most cases, scientific interest focuses on residential quarters only when analysing urbanistic concepts. It was not until the 1960's – under the influence of the Anglo-American research – that Classical Archaeology began to deal with the problems of private architecture to an increasing degree. In the meantime notable results have been obtained, for instance the excavations of houses on Monte Iato in Sicily, at Kassope and Eretria in Greece, at Pergamon in Asia Minor, at Dura Europos in Syria or in Bactria Ai Khauom¹ and in 1992 private architecture of antiquity was the exclusive subject of a congress held in Damascus.² In this briefly sketched background it may not come as a surprise that in Petra archaeological research has followed this general trend and concentrated on the stunning tomb-facades and temples – despite the fact that the conditions for archaeological investigation of the private architecture are particularly good and promising on

this site:³ first the authors of antiquity mentioned how the Nabataeans used to live and dwell; second the development areas of the city are not contaminated by recent building activities.

The Statements of the Authors of Antiquity

For lack of local, Aramaic written sources about the Nabataeans we have to rely on the statements of Greek and Latin authors, who had their reservations about the unfamiliar nomads. From their point of view the Nabataeans controlled – as a result of their excellent knowledge of caravan routes and of the scarcely existing water reservoirs and springs – the trade in spices and aromata between southern Arabia and the Mediterranean, but they were considered to be uncivilized people. This poor opinion of the Nabataeans is clearly expressed by the statement of Diodorus (XIX, 94.3-4) that the Nabataeans stuck to the following three prohibitions:

- neither to drink wine nor to plant vines,
- not to cultivate the ground,
- not to live in stone built houses.

For those unacquainted with the Arabic language and habits, the expression "stone built house" needs a short explanation. What may sound to the European like a pleonasm, since from his point of view every house is built of stone – or possibly of mudbricks – is solely understandable in terms of local tradition: the Accadic cuneiform inscriptions name the nomadic tent "house of the desert";⁴ even nowadays the Bdül nomads who live near Petra, call their big black tents "*bayt*" – commonly translated as "house" – and not "*kayma*", a term they use

For Greek houses: J. Travlos, *Bildlexikon zur Topographie des antiken Athen* (1971) 392ff.; M. Kreeb, *The House in Ancient Athens*, in: *Athens in Prehistory and Antiquity, Exhibition on Architecture and City Planning. 15th century B.C. - 6th century A.D.* (1985) 24ff.; H.-P. Isler, *Antike Kunst* 33, 1990, 57ff.; W. Höpfner and E.-L. Schwandner, *Haus und Stadt im klassischen Griechenland* (1986) 75ff. 205ff.; P. Ducrey and I. Metzger, *Antike Kunst* 22, 1979, 4ff.; K. Reber, *AA* 1988, 653ff.; id., *Antike Kunst* 32, 1989, 1ff.; 33, 1990, 111ff.; for Syrian houses: J. - J. Ch. Balty, in: *Apamée de Syrie. Bilan des recherches archéologiques 1973-1979* (1984) 19ff.; J. R. Gisler and M. Huwiler, *ibid.*, 79ff.; F. Baratte, *ibid.*, 107ff.; A. Schmidt-Colinet, *ibid.*, 141; ff. Ch. Donnay-Rosmans and G. Donnay, *ibid.*, 181ff.; A. Allara, *Syria* 63, 1986, 39ff.; P. Leriche, *ibid.*, 5ff. 61ff.; id., in: *Akten des I. inter-*

nat. Kongresses "Arabia antiqua" Rome 1990 (in print); for Bactria: P. Bernard, *AAAS* 21, 1971, 166ff.; id., *Journal asiatique* 264, 1976, 245ff.

² "Les maisons dans la Syrie antique du IIIème millénaire aux débuts de l'Islam; Pratiques et Représentations de l'espace" – colloque international de l'Institut Français d'Archéologie du Proche-Orient à Damas.

³ J. McKenzie, *The Architecture of Petra* (1990), for domestic architecture: 105ff.

⁴ H. Klengel, *Zwischen Zelt und Palast. Die Begegnung von Nomaden und Sesshaften im alten Vorderasien* (1972) 202ff. with n. 301; cf. also: F. Gabrielli, *L'antica società beduina, Studi Semitici* 2, 1959.

only for the small camping-tents of the American and European tourists. To distinguish a permanent dwelling of a town from the movable tent of the nomads, the material specification "stone" had to be added. Diodorus and his literary source seem to have taken over this term without question.

Whereas the first *tabu* ranks with the commands of abstention which are well known in pre-Islamic times, the two other prohibitions force the Nabataeans to renounce agriculture and permanent dwellings and to keep up their traditional way of life as nomads. The fact that not only the Nabataeans but also the Rechabites,⁵ who lived west of Wādī 'Arabah, had the same taboos proves that we are dealing here with a wider cultural phenomenon – that is to say the end of one of the immigration movement of Arab nomadic tribes to Syria and Palestine, that had started in the early first millennium BC.

Results of the Archaeological Research at Petra

There are three reasons to believe that the people in Petra did not follow the rules mentioned by Diodorus:

- The numerous carved rock-facades of the necropolises show towers, houses and palaces. Since the successful restoration of Qaṣr al-'Abd at 'Irāq al-Amīr⁶ we have a fairly precise idea of the appearance of the latter. It would be absurd to believe that the Nabataeans carved sumptuous tomb-facades out of the rock for the hereafter, and lived without the luxury of permanent dwellings and palaces here below.
- An inspection of the city's upper terraces reveals a high density of stone built foundations and walls, which could hardly have belonged to official buildings but must be regarded as remains of private dwellings. Given these facts we can assume a change from tent to house, i.e. from nomadism to settled abode. The difficult question remains as to when and how this change happened.
- An important point to mention in this context are the stamped Rhodian wine amphora handles. They are among the earliest datable finds in Petra and prove that even in the early third century BC the Nabataeans drank wine imported from the West.

Since the beginning of archaeological fieldwork in Petra back in the 1920s, dwelling-houses were partially excavated time and again – but it was not until Nabil Khairy's excavation in 1981 that a whole house was laid bare. Khairy's comprehensive studies on the architecture and the finds have been published recently.⁷

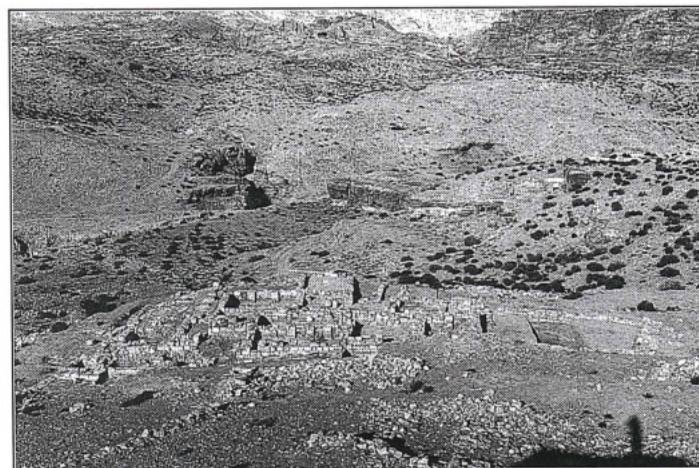
In his Area B, a row of large and small living rooms opens onto a monumental peristyle measuring 15 x 15

metres, paved with carefully laid flagstones. Under the pavement of the eastern part of the building, a system of channels and cisterns is located. They were hewn out of the bedrock in order to collect the precious rainwater for the long, dry summer months. Two stairways led to an upper storey which is not preserved. On account of the numismatic evidence – coins of Aretas IV with his second wife Shaqilat II (AD 18-40) – the building is dated at the beginning of the first century AD. Although the ground-plan was radically altered later, the overall impression of the original setting recalls the Hellenistic houses of Delos or Pergamon. Accordingly we may suppose that the Nabataeans already had a fairly precise knowledge of Hellenistic architecture at the time between the end of the first century BC and the beginning of the first century AD.

Excavations of the University of Basel and the Swiss-Liechtenstein Foundation for Archaeological Research Abroad

Since 1988 a team consisting of archaeologists, archaeobotanists and archaeozoologists has been working beneath az-Zanṭūr, the rocky peak of the city's south-western slope (FIGS. 1-2).⁸ From the very beginning the main aim was to lay bare Nabataean dwellings and to study their building methods. For this reason I will concentrate on a description of finds belonging to the Nabataean period. The late Roman buildings which were destroyed by the earthquakes of AD 363 and 419 will be only briefly considered.

Unfortunately we were not excavating undisturbed Nabataean architectural structures. In our excavations we are dealing with a late Roman settlement which is built over a Nabataean house that was erected in the late first



1. Petra. Az-Zanṭūr, general view.

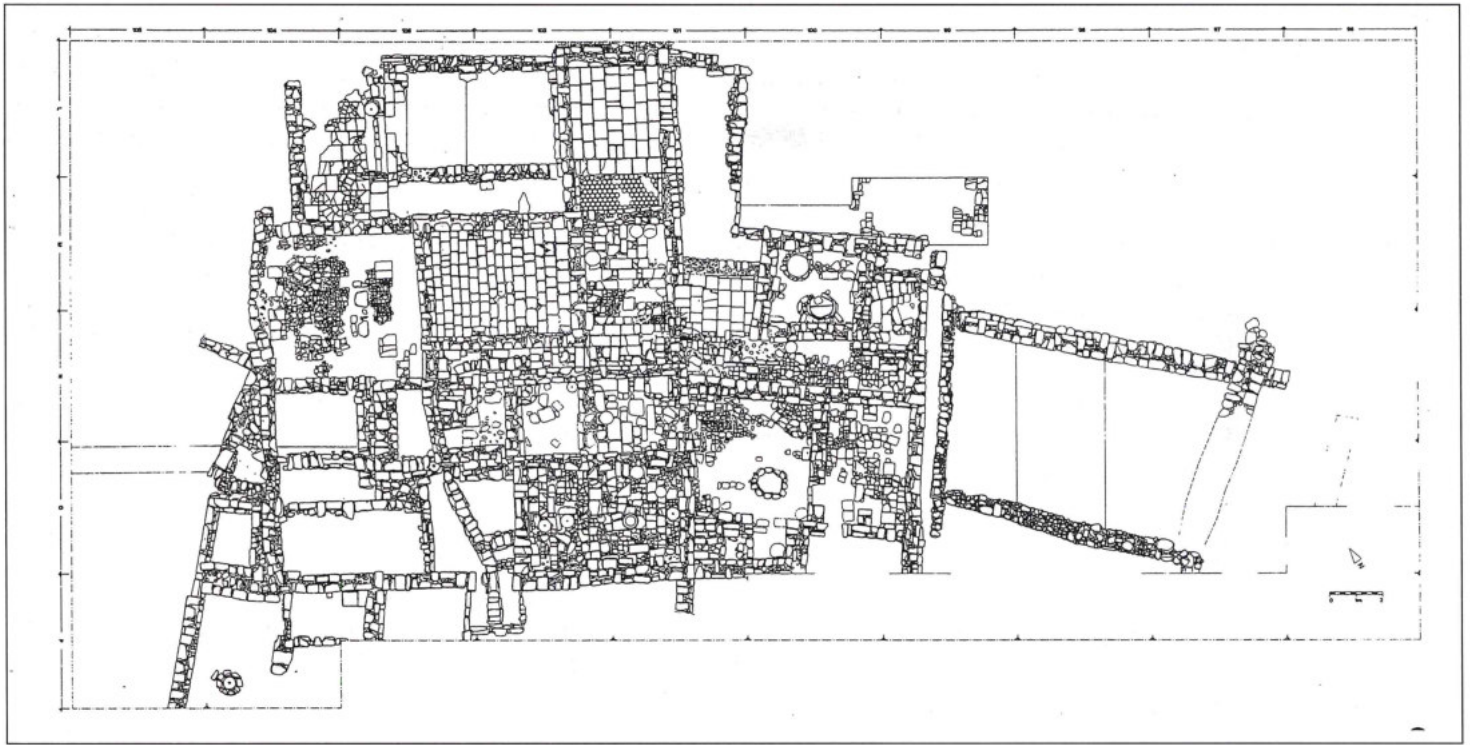
⁵ Jeremiah 35,6-10.

⁶ E. Will and F. Larché, *Iraq al Amir. Le château du tobiade Hyrcan*, Paris, (1991).

⁷ N. Khairy, *The 1981 Petra Excavations*, Abhandlungen des Deutschen

Palästinaverbands 13 (1990).

⁸ Preliminary reports: R. A. Stucky *et al.*; *ADAJ* 34, 1990, 249ff.; 35, 1991, 251ff.; 36, 1992, 175ff.; *Antike Kunst* 35, 1992, 129ff.; cf. also the catalogue of the exhibition in Zurich and Basel, *Petra und die Weihrauchstrasse*, 1993.



2. Petra. Az-Zanṭūr, general plan.

century BC or the early first century AD and destroyed during the early second century (FIG. 3). Around AD 300 the ruin of this building was demolished to its foundations and as much building material as possible was re-used for the construction of the new and smaller dwellings. We have therefore to reconstruct the Nabataean building from its ground-plan and the re-used architectural material. Nevertheless it is possible to state that the building measured about 30 x 30 metres and incorporated, like Khairy's, specific Hellenistic elements: light and air could penetrate from the climatically favourable northern side through peristyle III and through the small open-roofed room I in the inner area of the house. All the rooms were carefully paved with flagstones; the pavement in room XVII is comparable to the pavement in Khairy's Area C: sectors of large rectangular flagstones joined to sectors of small hexagonal "floor-tiles". The upper part of a capital and countless painted stucco-fragments, the remains of wall paintings in room II, prove that the interior decoration did not fall short of the highest Hellenistic standards. The house beneath az-Zanṭūr stands as another witness for the Nabataeans' knowledge of Hellenistic architecture and interiors.

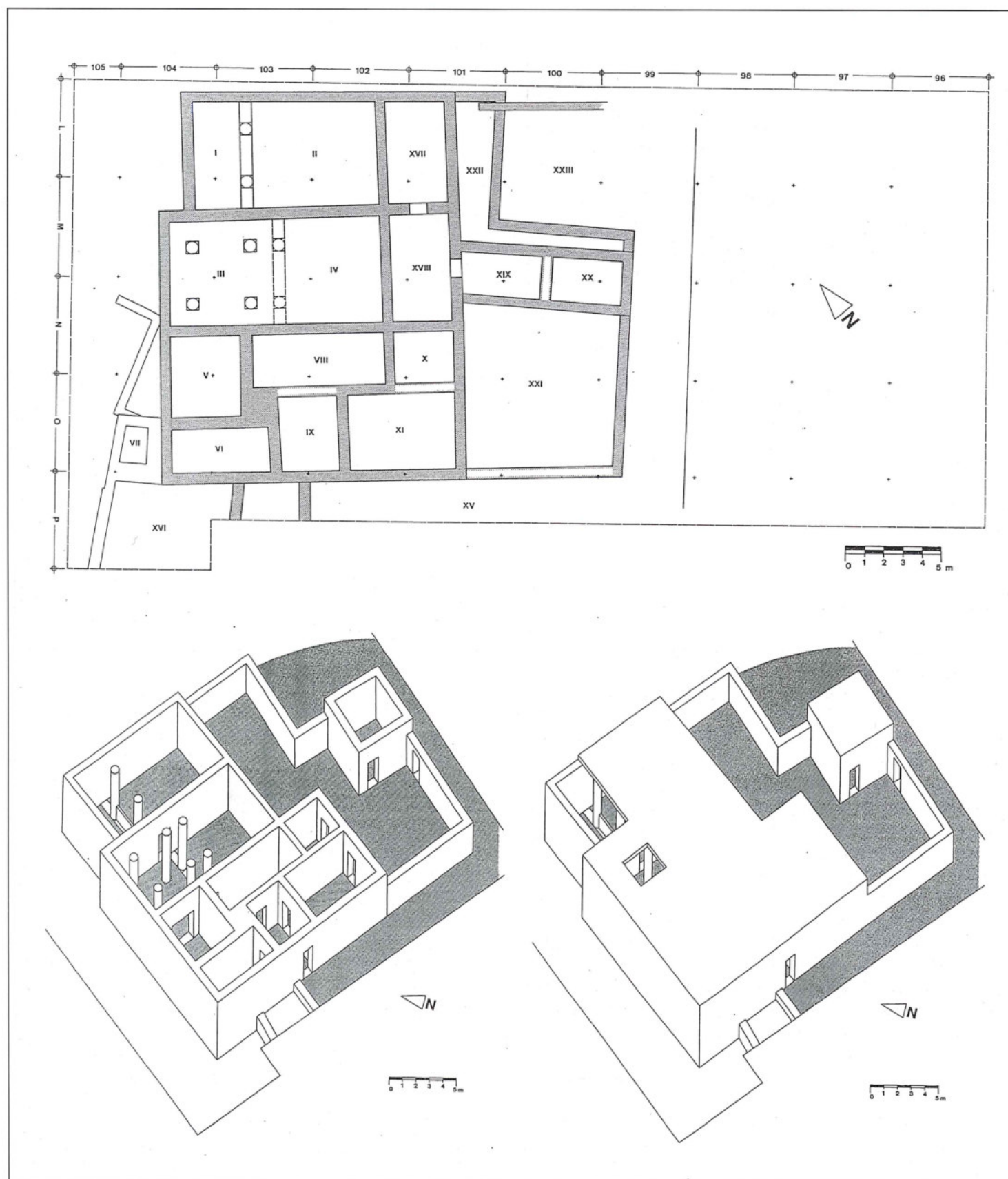
A further important question in discussing Nabataean architecture is whether the Hellenistic influence included the advanced construction and engineering techniques. From the start of our excavation we encountered the phe-

nomenon that the outer walls, erected at the edge of the terrace, were bulging out or lost completely, as was the case in the northeastern corner. The numerous retaining walls and outer foundations which were added later, were attempts to prevent the walls of the endangered rooms from crumbling down. The protrusions of walls and additional auxiliary constructions are especially evident on the northern facade of peristyle III and room I.

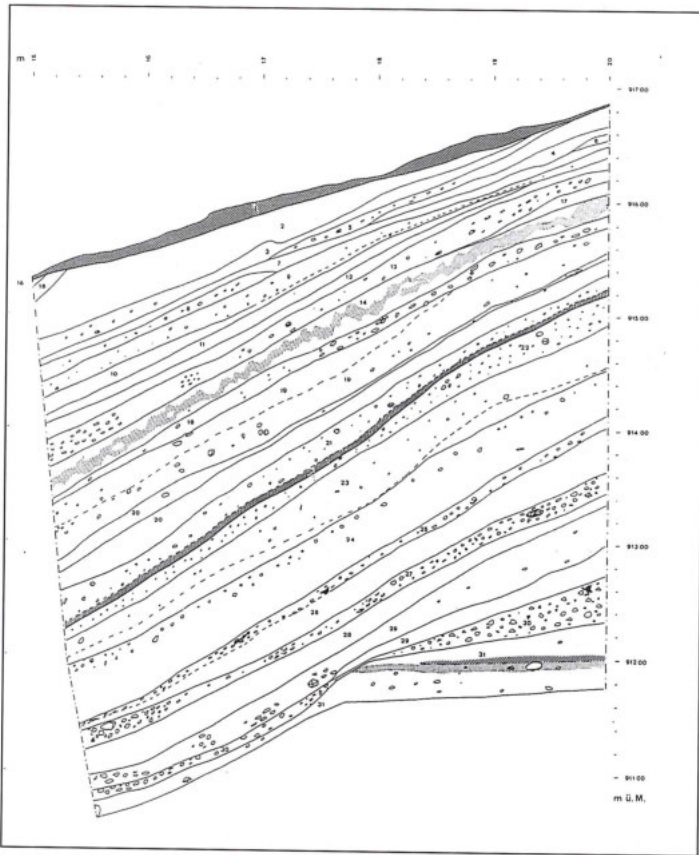
The explanation for the distortion of the outer walls was found in the large stratigraphical trench (FIG. 4) on the eastern side and in two small trenches on the northern and on the southern sides of the terrace. Contrary to our expectations, which were based on the knowledge of Hellenistic dwellings in Greece, Asia Minor and Syria, there was not a single retaining wall to be found. The profiles show only so called "Fliess-Schichten", floating layers – that is to say layers of sand that originated on the one hand from the natural eroding process of the bed-rock and on the other from litter deposits. In these layers of the large trench we found a large number of slightly damaged vessels that had been thrown away by the occupants. The most important find was a painted Nabataean bowl.⁹

Obviously the builders did not strengthen the terrace with retaining walls but left the steep slopes as they were. Despite the relatively deep-grounded foundations, the outer walls were too weak to resist the thrust of the building, which was increased by the slight inclination of

⁹ Stucky, *Antike Kunst* 35, 1992, PL. 28,3.



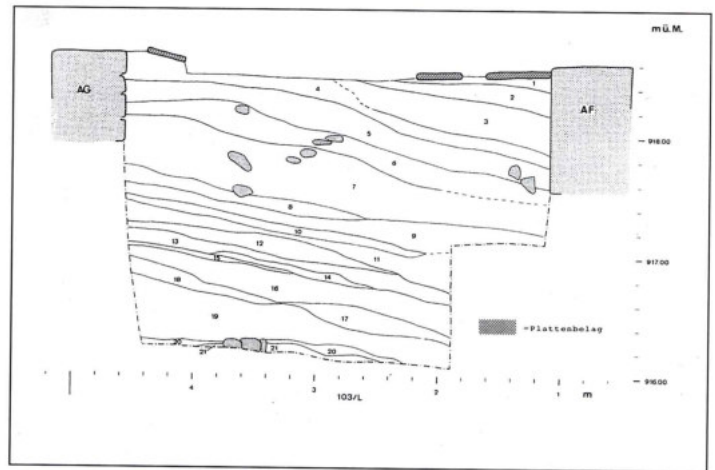
3. Petra. Az-Zanṭūr, Nabataean house of the first century AD. (Ground-plan and reconstructions).



4. Petra. Az-Zanṭūr, stratigraphical trench.

the house toward the edge of the terrace. To sum up, we may say that the “architect” of the Nabataean house had considerable knowledge of Hellenistic architecture as far as ground-plans and interior decoration were concerned, but not of the construction techniques necessary to deal with the immanent static problems. This fact is perfectly illustrated by the placement of the roofless, that is to say especially unstable room I, at the most exposed point of the terrace.

The architectural evidence laid bare in just four campaigns does not, of course, allow us to draw any definite conclusions relevant to all residential quarters of the city – but I would nevertheless like to propose the following hypothesis: at least some of the Nabataean houses were not built on the rocky outcrop but on the statically unsound sandy grounds of the terraces. The absence of retaining and terraced walls fundamentally modifies the hitherto accepted notion of the residential quarters at Petra as it has been illustrated, for instance, in Iain Browning’s guide to Petra.¹⁰ Our results also have an immediate effect for the estimates of the density of the city’s sedentary population. In contrast to the usual plan of Hellenistic cities with rectangular street grid and uniform



5. Petra. Az-Zanṭūr, sounding in room II.

house complexes, built in close sequence, the houses of Petra were not only without a standardised alignment but loosely spread over the slopes on both sides of the wadi. The city showed two “urbanistic systems”: the sanctuaries and the official buildings located close to the wadi were built on the rectangular system named after Hippodamos of Milet.¹¹ The residential areas on the contrary must have resembled a “petrified nomads’ camp”.¹²

The question as to the reasons for the Nabataean divergence from Hellenistic urbanism may be answered at least in some respects. In room II the late Roman settlers tore out not only the walls but also the pavement in between. For that reason it was possible to make a sounding in this sector (FIG. 5). The aim was to find out when the Nabataean building was erected. We had to dig down some 1.5 m to come upon light greenish layers with an unusually firm texture. They contained not only numerous fragments of pottery and lamps but also quantities of bone splinters – all in all clear indications of intensive dwelling activities. Furthermore these layers had no definable outer limit – neither traces of stone nor mud brick walls were found – but ran out lenticularly to the edge of the terrace. The finds seen together with the density of the firmly compacted material must lead to an identification as habitation layers. This interpretation was confirmed by a sedimentological analysis. Thin and sterile layers separate the four so far detectable approximately horizontal green strata, which have thicknesses from 10-15 cm. All these indications combined with the fact that in the nearby stratigraphical trench these layers are missing lead to the assumption that they represent the trampled deposits of tent floors.

We have to drop the customary idea of a tent with a rigid “skeleton” made of wood or metal with a “skin” of cloth stretched over it. Reliefs of the second half of the

¹⁰ I. Browning, *Petra* (1989) 150 FIG. 75.

¹¹ Schwandner and Höpfner, 247ff.

¹² Stucky, *Antike Kunst* 35, 1992, 138 FIG. 8.

seventh century BC from Assurbanipal's palace in Nineve¹³ depict the king's campaigns into Arabia. A detail shows the corpses of Arabian warriors lying under burning tents. These tents correspond largely to those used by today's Bedouins. They consist of a woolen tent-cloth and wooden tent-poles, which are just placed under the stretched tent-cloth without being driven into the ground. So the nomads' tent looks more like a canopy than like a modern camper's tent.

The limited dimensions of our sounding did not enable us to lay bare the complete extent of the greenish layers; a singular round depression reaching exactly the bottom of one of these layers, could possibly be caused by a tent-pole. We may draw the tentative conclusion that tents of the type described stood on the terrace beneath az-Zanṭūr until the first century BC. At their seasonal return to the city the different families rebuilt their camps on the respective "hereditary" terraces. During their absence a thin layer of soil had covered the traces of the last temporary habitation and can be identified stratigraphically as the sterile strata separating the habitation layers. Supposedly during the late first century BC the first humble stone-built dwelling was erected on the ter-

race, the measurements of which we do not know yet.

For the first time in Petra it is possible to conceive the change from nomadism to a settled way of life, a process which before was only documented by the authors of antiquity. It should not be assumed that this development happened abruptly; it is more likely that during a transition period, tents stood beside permanent houses. Depending on the climatic conditions the inhabitants chose the one or the other way of housing – as is usual in Jordan up to this day. For that reason we should not be surprised that the terraces were not specially prepared and stabilised with retaining walls by the Nabataeans but that they left the sites in the given state – if there was no possibility to build on the rocky outcrop, as they usually did.

Our excavation brought to light the dilemma between ready acceptance of Hellenistic innovations and a persistent clinging to local traditions. We are dealing here with a phenomenon that is not only true of the Nabataean way of dwelling and planning of habitation quarters, but of other aspects of Nabataean material culture as well, such as the tomb facades, the sculpture and the pottery.

¹³ *Ibid.*, PL. 26,4; R. D. Barnett, *Assyrian Palace Reliefs and their Influence on the Sculptures of Babylonia and Persia* (1960) PL. 114.