The Space of the City in Graeco-Roman Egypt
Image and Reality

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7. REFLECTIONS ON URBANISM IN GRAECO-ROMAN EGYPT: A HISTORICAL AND REGIONAL PERSPECTIVE

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During the Ptolemaic and Roman periods, many new settlements were established and those already existing continued to flourish, though sometimes remodelled to reflect a change in lifestyle. A historical analysis of the urbanization of the country and of the urban models that spread during these periods is inevitably subject to a high degree of generalization because of our imperfect archaeological knowledge of the settlements (Davoli 2010 a).

There are three main causes that affect our knowledge and that must be taken into consideration when studying archaeological sites. Firstly, we can list the continuity until modern times of settlements within the same areas, due to the necessity of building at higher elevations than the annual Nile flood. The majority of the settlements disappeared, having been continuously rebuilt or buried under modern ones, as was the case of Thebes or Alexandria. This also implies the reuse of building materials such as stone, wood and mud bricks (McKenzie 2007, 8-18).

A second cause is also connected to the modern re-anthropisation of fringe areas, which had been abandoned since Late Roman or Byzantine Periods. There, ancient settlements were buried under the sand of the desert and were preserved for centuries until the beginning of the political and economic process that transformed Egypt into a modern nation. Mohammed Ali (1811-1848) set the basis for the economy of modern Egypt. Agriculture was the primary source of revenue and the economic revolution took place beginning with new land reclamation projects throughout the country. Fertile land quadrupled between 1820 and 1880 and at the same time the population increased and villages, towns and cities expanded. In this period, many ancient sites, except those in the oases, were used as quarries for building material for the new settlements, and for *sebbakh* as fertilizer for the new industrial agriculture. As a result, a number of *kiman* were dismantled and had disappeared by the mid-20th century (Davoli 2008).

The third reason for our imperfect knowledge of urbanism in the Graeco-Roman period is the scarcity of large-scale archaeological excavations. It is well known that in the past, Egyptologists paid little attention to Graeco-Roman features and in many cases ignored settlements and necropolises of those periods completely. On the other hand, they were the focus of several excavations carried out by papyrologists who, beginning with B.P. Grenfell and A.S. Hunt in the Fayyum (1895), were interested exclusively in recovering papyri and written evidence. These scholars were not trained archaeologically and, because of their interests, they did not document the archaeological contexts (Davoli 2001, 7-15). During the last 20 years this trend has changed (Bagnall 2001; Bagnall and Davoli 2011), although many Graeco-Roman settlements have disappeared, either completely or partially, and modern methods of excavation require many years of work before reaching a good deal of knowledge about a settlement.

Our understanding of urbanism in Graeco-Roman Egypt improves considerably if we combine our partial archaeological data with textual evidence such as Greek and Egyptian documentary and literary sources. Papyri, *ostraka*, epigraphic texts, classical authors, and the so-called 'geographical lists' of the Graeco-Roman temples (e.g. Dendera and Edfu) provide a large number of place names, references to public buildings and sometimes descriptions of houses, temples, streets or other urban features (Lukaszewicz 1986). It would be a terrible methodological mistake not to take into account all these sources, and our understanding of urbanism would be incomplete if we failed to place the geographical landscape, geomorphology and water sources in the historical context that such sources reveal (McKenzie 2007, 151-154).

After these preliminary remarks on the degree of knowledge about Graeco-Roman urbanism in Egypt, we should consider what kind of evidence we have, beginning with the concept of urbanism.

The categorization of an ancient settlement as a city, town or village is a matter of debate, as is the question of whether the Egyptian civilization can be considered as an urban civilization or not. From my point of view, which is mainly archaeological, we must consider Egypt as an urban society from its very beginning, but we should be aware that the concept and functions of the Egyptian urban settlements were different from those of the Near East, or of the Greek and Roman worlds. This peculiar situation is mainly due to the nature of the Egyptian kingdom, a vast territory governed by a central power through a network of local offices, which were organized in a hierarchic sequence that, generally speaking, never substantially changed. Moreover, the geography of Egypt, the distribution of water, the climate and the annual flooding of the Nile contributed substantially to the peculiarity of what we can call "Egyptian urbanism".

Poleis (Alexandria, Naukratis, Ptolemais Hermiou, and Antinoopolis) and *metropoleis*, the capitals of the

nomoi, can be fully classified as cities, with public spaces and buildings and a conspicuous architectural and monumental apparatus. They differ in juridical status (*metropoleis* did not have a *boule* until Septimius Severus, 201 AD), but not from an architectural point of view, as we can certainly deduce from written sources (Lukaszewicz 1986, 20-22). Recently, scholars have tended to consider these Roman-period cities as very similar to other provincial cities of the Roman East and probably influenced by Alexandria as a model (Bailey 1990, 121; McKenzie 2007, 154).

All the other settlements are commonly classified simply as villages. However, there is a series of them still preserved in the Fayyum and the Oases, such as for example Soknopaiou Nesos, Dionysias, Tebtynis, Philadelphia, Karanis, Trimithis and Kellis, that cannot be considered as simple villages.[1] Their complex plans and the impressive monumentality of their main temples – *temenos*, *dromos* and related buildings and monuments – prevent me from considering them as simple villages. They should be thought of as towns or small towns, settlements of a third rank in the Egyptian hierarchical government of the country. From a juridical point of view, they cannot be classified as towns or cities, but this is also the case of the *nomoi's* capitals before the 3rd century AD.[2]

Therefore such towns will be considered in this paper as urban settlements.

Unfortunately, *poleis* and *metropoleis* are not well preserved, or are hidden below later settlements, except for Antinoopolis and a few others (Davoli 2010 a). Therefore, we cannot compare their pre-Hellenistic urban layout with that of the Hellenistic and Roman periods.[3] Their plans and monuments are sometimes only known from scant archaeological remains and texts that suggest a change in the urban landscape in the Ptolemaic period, with the introduction of pure Classical-style buildings[4] side-by-side with those of Egyptian and Alexandrian-style. Archaeological and textual evidence is more explicit for the Roman period, when the cityscape became progressively more Classical in style and very similar to that of other Roman cities in the East. Papyri attest to an intense

building phase between the 2nd and the 4th centuries AD in some *metropoleis*, like Hermopolis Magna, Oxyrhynchos,[5] Antinoopolis and Herakleopolis (Lukaszewicz 1986, 140-141).[6] Colonnaded streets, triumphal arches, *tetrastyla*, theatres, baths, hippodromes were built here in different kinds of stones and some of their parts are still preserved. It is assumed that *poleis* and *metropoleis* had the same general structured plan, with orthogonal streets and the same kind of public buildings, as mentioned in texts of the Roman period, also before the concession of the *boule* to the capital of the *nomoi* (201 AD).[7]

The urban layout and monumental apparatus of Alexandria and the above mentioned *metropoleis* have been studied and analyzed in several recent publications[8] and there is no new evidence that can modify or improve our knowledge, unless we turn our attention to the smaller towns, or third rank settlements, of which several examples still survive. Their monumentality cannot compete with that of Alexandria or the *metropoleis*, but their better state of preservation allows us to appreciate otherwise unknown urban and architectural features and to suggest new perspectives.

In an attempt to do this, I will examine some case studies located in the Fayyum and the Dakhla Oasis.[9]

1. Fayyum examples (Fig. 1)

The Fayyum is usually described as the most Hellenized region of Egypt because of the presence of a high number of Hellenes as settlers and the impressive Greek documentation on papyri that speak about people, institutions and culture. Could we also recognize these characters in the organization and architecture of settlements?

From the beginning of the Ptolemaic period, a series of new settlements was founded throughout Egypt, particularly in the less densely populated areas of the *chora* and the Fayyum. The latter region was the subject of an impressive land reclamation project during the reigns of Ptolemy I and II (Manning 2003, 103-8). Our knowledge of this region is fairly good,

1. According to Alston (1997, 202-9), there were only two ranks of urban settlement, the *poleis* at the top and then the nome capitals. A third rank defined as urban on the basis of quantitative and qualitative data is added by Davoli (1998, 30-1) and Mueller (2006, 100). I would list such Fayyum settlements in this third urban rank.

2. As already stated, we cannot base our classification and terminology on those used in ancient texts because they are ambiguous (Bowman 2000, 174) and not intended to convey technical meanings (Mueller 2006, 99).

3. They were better preserved in the 18th cent. and were documented during the Napoleonic expedition. The appearance of these cities in the 3rd cent. is well described by Bagnall 1993, 45-48. Krokodilopolis is not preserved, but we can have a glimpse of its buildings from papyri: Daris 2007, 20-42. On its hydraulic system: Habermann 2000 (P.Lond. III 1177).

4. They were both public and domestic buildings, public spaces like *stoa, agora*, new temples to Greek gods and to the royal cult.

5. Calderini and Daris 2003, 103-104.

6. This situation contrasts with other areas of the Empire that suffered an economic and political crisis. For a discussion on this topic see Lukaszewicz 1986, 139-57.

7. On *boule* and the textual evidence of its institution in Egypt cf. Bowman 1971, 7-19.

8. See at least Bailey 1990; Pensabene 1993; Bowman 2000; McKenzie 2007.

9. A general view of Graeco-Roman settlements in Egypt is in Davoli 2010*a*.

FIGURE 1.
Satellite view of
the Fayyum with
Graeco-Roman
settlements (map
by B. Bazzani).
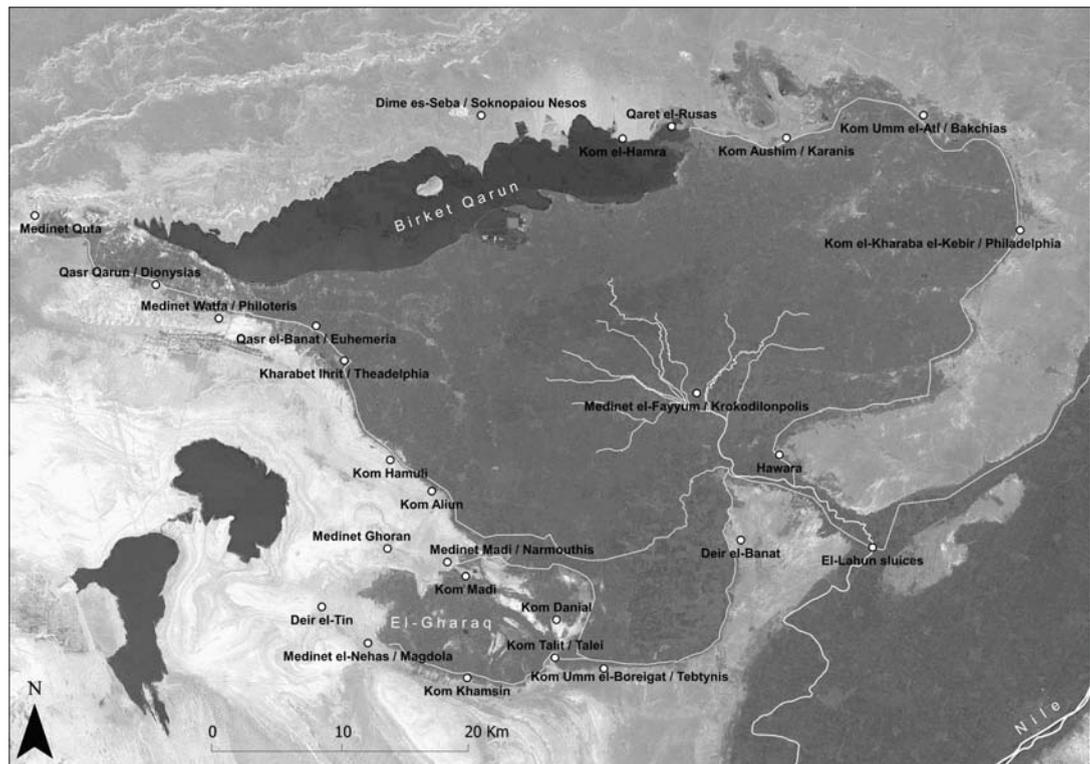
especially for the Hellenistic and Roman periods and in comparison to other *nomoi*. However, we do not have a precise idea of its development in other periods.[10] The distribution of the settlements and their plan layout are only partially known, and often it is unclear whether there are older settlements below the Hellenistic foundations. For this reason, we cannot compare plans, distribution and urban strategies before and after the Ptolemaic land reclamation project.

The location of buildings and settlements in the Fayyum is influenced not only by the annual Nile flood, as it was in the Nile Valley and the Delta, but also by the presence of marshes, natural canyons and channels, and by two lakes that fluctuated over time, one in the north (today Birket Qarun) and one in the south (in El-Gharaq basin). As is well known, the Fayyum is a pseudo-oasis fed by the water of the Nile through the Bahr Yussuf, but above all it is a vast natural depression in the desert (from + 20 m to − 55 m asl). The cultivable areas are thus distributed over a territory that is partly irrigated artificially and in which slopes changes quite rapidly. This geomorphology conditioned the network of canals and therefore also the presence of settlements. The artificial origin of vast portions of the agricultural land entailed a great commitment to its maintenance by the government and the foundation of artificial settlements of colonists.

These were strictly connected with each other because of the exploitation of the water and the maintenance of the canal system that was certainly managed by the local communities.[11]

I will not deal with settlement distribution in the Fayyum,[12] but I will focus on some characteristics of the plans and the architecture of some of these towns. This will allow us to establish comparisons with other regional contexts.

The preserved settlements in the Fayyum are located on its fringe, where the anthropization was not continuous and the desert sand covered the ancient remains and protected them until the end of the 19th century. On the other hand, the wet climate and dense population contributed to the destruction or concealment of the centrally placed settlements.

Considering the state of the archaeological work in this region and our knowledge, I do not think it is yet possible to write a history of Fayyum urbanism: many sites need deeper exploration and the documentation of previous excavations needs to be revised, as is the case of Karanis.

Of the ancient metropolis of Krokodilopolis, a few buildings and monuments are poorly preserved, out of any stratigraphic context and completely isolated. They consist of some ruins of a great *temenos* (the temple of Sobek), four bathhouses, statues of Ramses II,

10. Butzer (1976, 92-3) suggests that the cultivated area of the Fayyum before the Hellenistic period was 450 km², increasing to 1300 km² after the reclamation program. However, it is unclear on what evidence he bases this estimate.

11. On this subject in 4th cent. Fayyum see Bagnall 1993, 141-42.

12. A tentative study of the settlement distribution is in Mueller 2002, 2003; Mueller; Lee 2005. See also Hoffman and Klin 2006.

and fasciculate columns of Amenemhat III.[13] A Greek inscription carved on a segment of a freestanding wall made of limestone blocks seems to testify to the presence of a theatre built by a Ptolemy. Several Egyptian temples, an Adrianeyon, a Sebasteyon, *agorai*, a *stoa*, a *nympheum*, and a *capitolium* are mentioned in papyri (Daris 2007, 20-42), but we do not have the possibility of placing them on a plan and discussing the urban development of the Fayyum capital. Classical-style architecture was probably built side by side with pharaonic style buildings, as happened in other Fayyum settlements. Scattered pieces of stone decoration are the only evidence of such buildings, together with the remains of some bathhouses.

The published plans of the preserved towns are in most cases misleading as they document the preserved buildings visible on the surface when the plans were drawn.[14] These buildings could have been exposed by human intervention, such as *sebbakhin* activity, and could thus be part of different layers and periods and not consistent. A good example of this kind of situation is Bakchias, where the poor condition of the site was caused by intense *sebbakhin* activity that destroyed a large part of the settlement. Many buildings are visible today on the surface, but at different elevations, and they clearly belong to different layers and chronological phases. (Fig. 2) Therefore, the general plan recently published (Giorgi 2004, fig. 1) shows buildings of different building phases, from Hellenistic to the Late Roman period, side-by-side. (Fig. 3) This complex stratigraphy, consisting of several layers of buildings, is quite common in the Fayyum fringe settlements that are real *kiman* or *tell*. The major causes of this progressive increase of levels were the accumulation of sand blowing from the desert and a sequence of phases of abandonment and reconstruction.

Other sites are not *kiman* and their transformation occurred only in one layer. This is the case of Philadelphia, Theadelphia, Euhemeria and Dionysias, settlements that were built inside the cultivated area and not surrounded by the desert sand. Traces of old canals that testify to the presence of cultivations around these towns were still visible in the 20th century (RAF aerial photographs). Without the deposition of windblown sand, these settlements developed horizontally, with progressive changes in the already

FIGURE 2. Bakchias: in the foreground the foundations of a Roman-period temple; in the background the dunes surroundings the central area damaged by *sebbakhin*.

13. Davoli and Nahla 2006. Recently the Ramses II statues and *stelae*, the Amenemhat III columns and other monuments have been removed to the archaeological area of Karanis.

14. In a few cases, such as Karanis, Soknopaiou Nesos and Tebtynis, we also have the plans of the excavated buildings layer by layer.
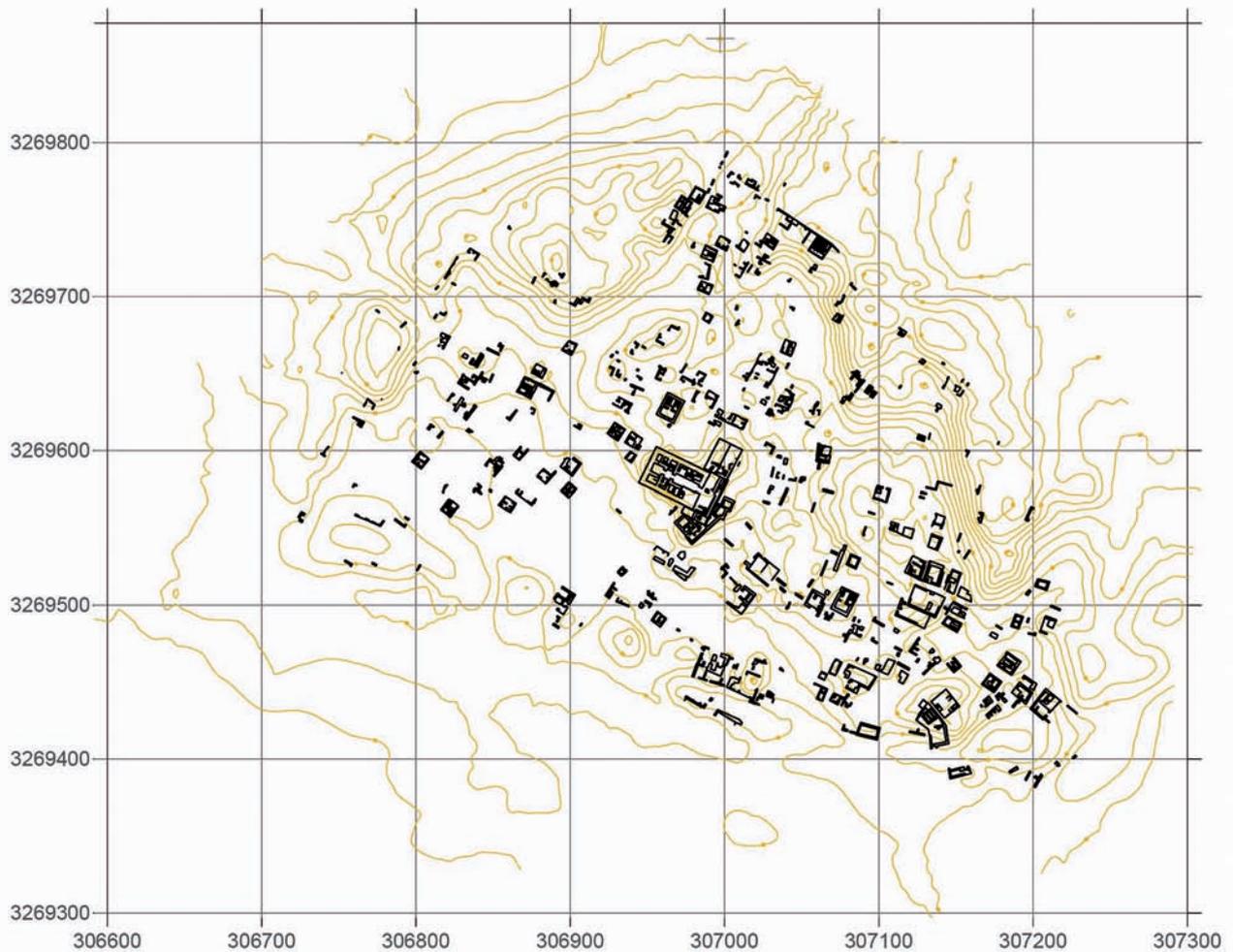
Figure 3. Bakchias/Kom Umm el-Atl plan (in Giorgi 2004, Fig. 1).

existing buildings, demolition and re-building. For this reason the topographic plans we can document[15] reflect the degree of preservation of the last phase of occupation.

The excavation of the multi-stratified sites, or *kiman*, demonstrated their progressive transformation in terms of dimension, number and density of buildings. Complete diachronic plans are not available, and only in a few cases and for limited areas do we have sequences of plans according to layers, for example at Karanis (Husselman 1979), Soknopaiou Nesos (Boak 1935), Bakchias (Davoli 2005, 218-9) and Tebtynis (Hadj-Minaglou 2007). The dimension of the towns and the density of the buildings start to increase at the end of the Ptolemaic period. A substantial change in the urban layout was probably produced by a significant growth in the urbanized population in the first half of the 2nd century AD. The geographic environment and the presence of some features, such as channels, the *dromos* and the main temple precinct, influenced the basic lines of this transformation.

Philadelphia has been described as a town according to a Hippodamian grid plan and therefore not Egyptian. However, we must be cautious because this interpretation is based on the only plan we have of it, which is very schematic and incomplete. (Fig. 4) Moreover, it shows the layout of the last occupational phase and we cannot verify that of its foundation level as Philadelphia no longer exists (Davoli 1998, Figs. 60-61). What we can see in the plan and in an aerial photograph taken in 1925 is a regular chessboard plan built up with regular blocks of 100×50 m. Two small temples are marked on the plan and they are set inside the schema. The major temple and its *dromos* have never been identified, but this does not mean that they were not there.

15. Theadelphia and Euhemeria are now completely destroyed and we do not have any plan or documentation for them. Philadelphia also disappeared, but it was excavated by German papyrologists who published a summary report from which we can argue that there was only one layer: Davoli 1998, 139-148. Dionysias is still quite well preserved and the excavations revealed only one layer: Davoli 1998, 301-323.
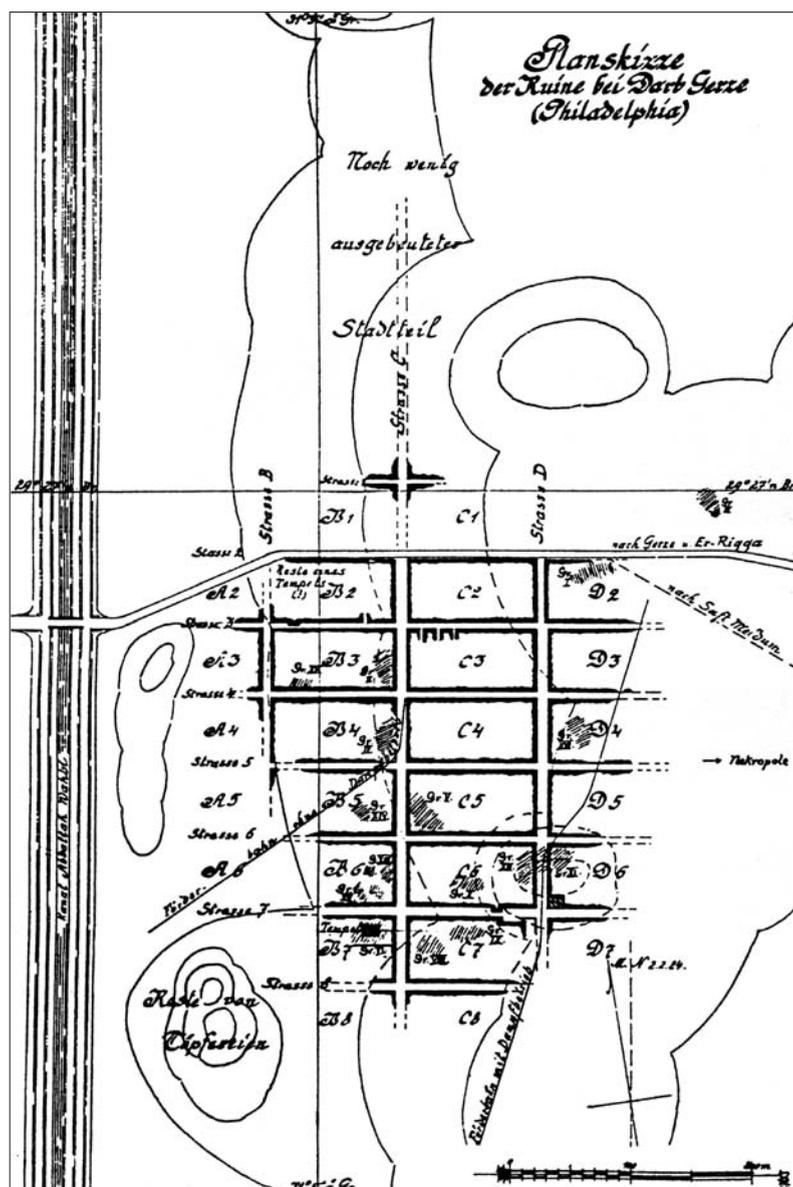
FIGURE 4. Philadelphia/Kom el-Kharaba el-Kebir (in VIERECK–ZUCKER 1926, Taf. I).

The orientation of the settlement follows the course of the main local canal, rather than a theoretical compass orientation of Vitruvian tradition. Dionysias is based on a similar urban layout. Also in this case it was a new foundation from the 3rd century BC and apparently the street network is strictly orthogonal. (Fig. 5) It seems that the blocks of houses were quite regular and it is clear that the orientation of the roads follows the main local canal. The temple and the *dromos* are not in the very centre of the settlement, but are perfectly inserted into a regular grid.

Another town that developed at the time along an axis is Soknopaiou Nesos (Davoli 2010 b). (Fig. 6) The first settlement was probably built around a hill on the top of which the temple of Soknopaios was built and the *dromos* was, from the beginning, a suspended

paved street and the main axis of the settlement. The domestic area expanded in time towards the south on both sides of the *dromos*. (Fig. 7) The direction of the expansion was determined, presumably, by the presence of the lake to the south, which was the main way used to reach the most productive part of the region. The *dromos* (originally 397 m long) is one of the most extraordinary features of this town. It was built on top of a foundation structure more than 3 metres high that constituted a real barrier in the middle of the domestic area. Two parallel streets ran on both sides of the *dromos* – but ca. 3 m below it – and were connected with the street network by means of tunnels under the *dromos* and stairways. (Fig. 8) Therefore, the *dromos* was used only as a monumental processional way and not for common or domestic purposes.[16]

16. The Soknopaiou Nesos Project of the University of Salento, directed by M. Capasso and P. Davoli, began the excavations in 2003. See the annual reports at: http://www.museopapirologico.eu/snp.htm.
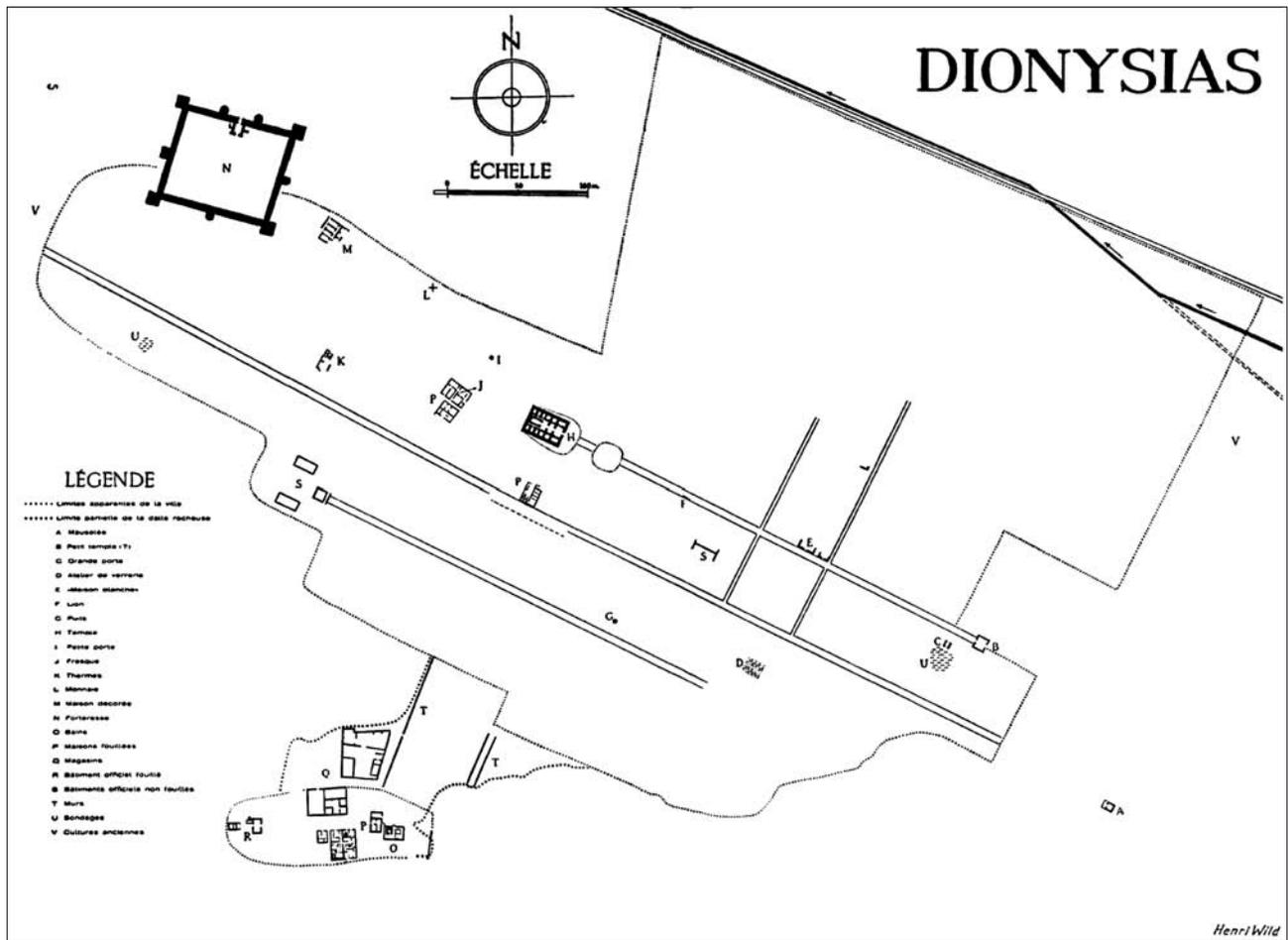
FIGURE 5. Dionysias/Qasr Qarun plan (in SCHWARTZ-WILD 1950, Pl. II).

Dromos and temple also formed a unit at Tebtynis, where they were part of the Hellenistic foundation of the town and continued to be transformed until the reign of Trajan. Three floor phases have been identified (Rondot 2004) from Ptolemy I to Augustus, along a length of 210 m. The temple and *dromos* are located on the south-western border of the town, with domestic and public buildings on both sides of the *dromos*, although the settlement expanded mainly towards the east. The town plan is not regular and the streets follow two slightly different orientations. (Fig. 9) The *dromos* is oriented north-south and was probably orthogonal with the main canal.[17] Similarly, the Middle Kingdom temple of Renenutet at Narmouthis/Medinet Madi is located outside the town centre. The temple continued to be active during the New Kingdom until the Hellenistic and Roman periods, when it was enlarged and a *dromos* built in front of it. The paved processional way is well preserved to a length of 230 m and runs southwards, where the cultivated land is currently found (Bresciani and Gi-

ammarusti 2009). (Fig. 10) The general plan of Narmouthis visible on the site surface is quite regular, with a network of orthogonal streets oriented to the compass points following the orientation of the *dromos* (Bresciani, Giammarusti, Pintaudi and Silvano 2006, 257). (Fig. 11)

Karanis seems to be a completely different case in the urban landscape of the Fayyum. In fact, its Roman period plan (Layer C) looks different with regard to the street layout. (Fig. 12) There are only two streets running north-south towards the fields and the canal, and none crossing the entire town from east to west. The blocks are of different shapes and sizes, with narrow orthogonal alleys that often form a T-shape crossing. In the centre of the *kom* there are two stone temples apparently without *dromoi*.[18]

Numerous are the Roman-period public and semi-public buildings excavated at Karanis, including temples, granaries, dovecots and bathhouses (Husselman 1979; Castel 2009). These kinds of buildings were also present in other Fayyum towns, as we can

17. On the orientation of the Fayyum temples, see Davoli 1998, 359-370, where different possible reasons are examined.
18. The central part of the *kom* was destroyed by *sebbakhin* and it is not possible to establish what was there, including the *dromoi*.

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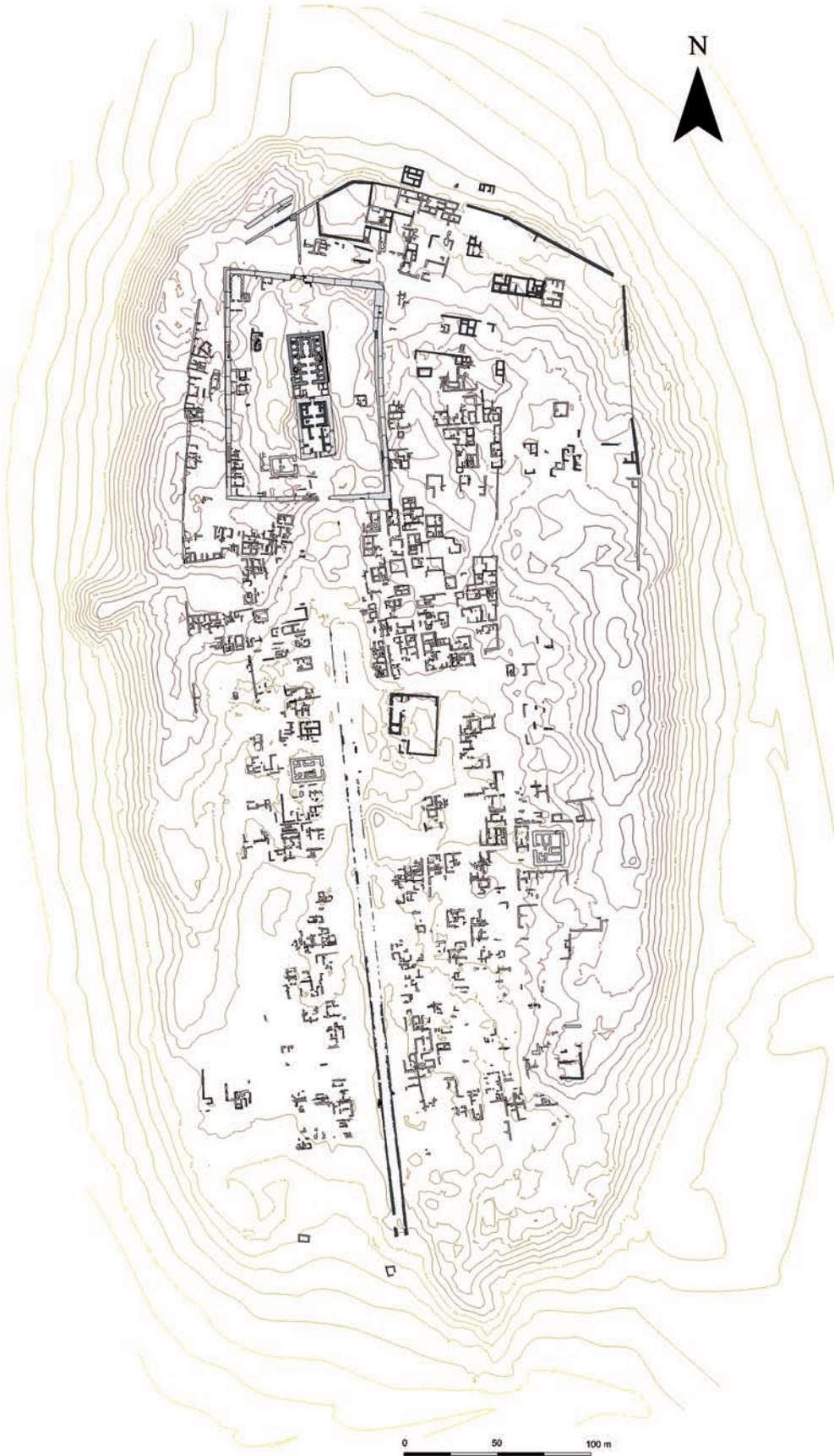
FIGURE 6. Soknopaiou Nesos/Dime es-Seba plan (2010, courtesy of The Soknoapaiou Nesos Project).

FIGURE 7. Soknopaiou Nesos: *dromos* from north to south.

FIGURE 8. Soknopaiou Nesos: *dromos* west view with one of the tunnels.
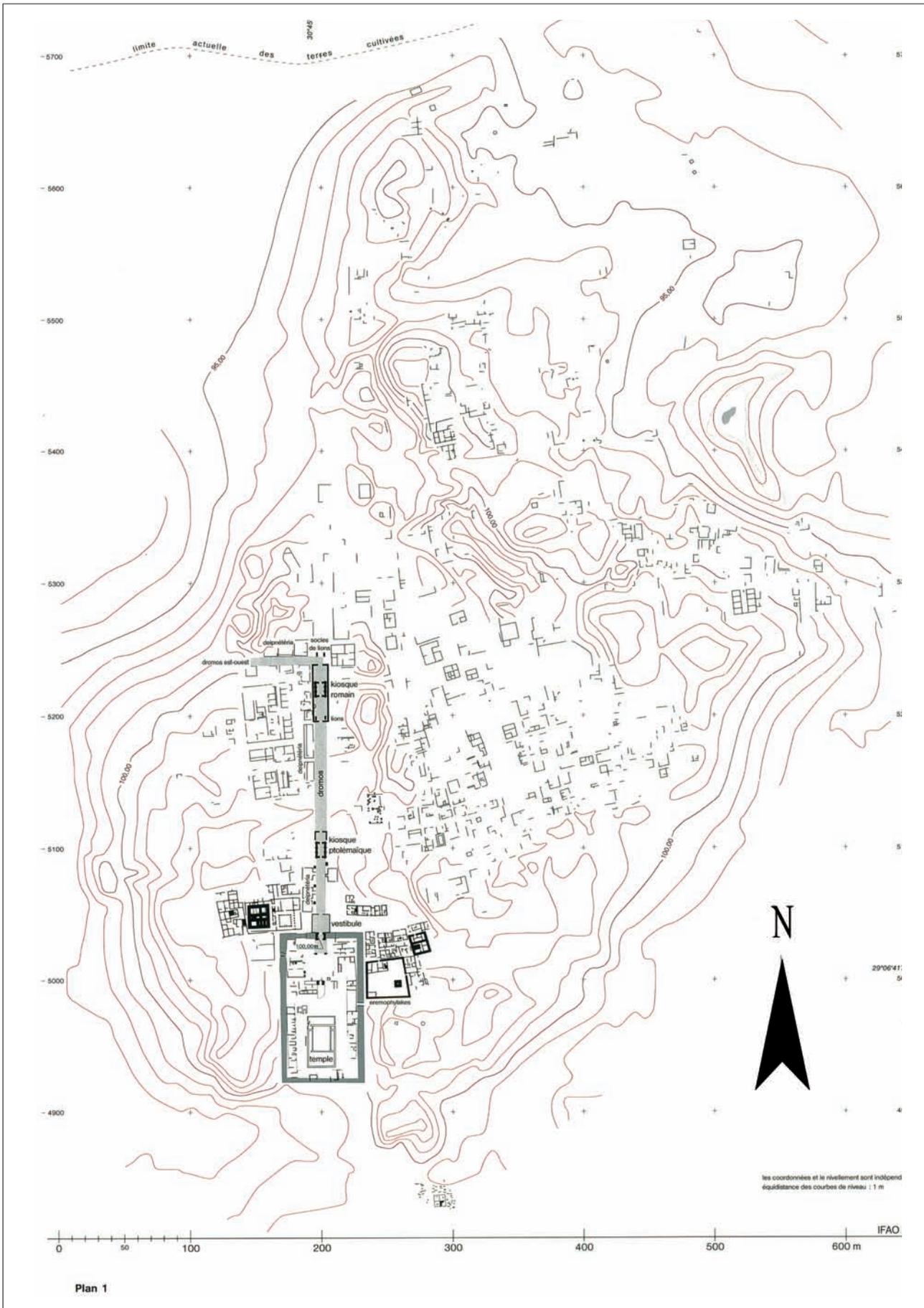
FIGURE 9. Tebtynis (Kom Umm el-Boreigat) plan (in RONDOT 2004, plan 1).

Figure 10. *Dromos* and temple at Narmouthis.
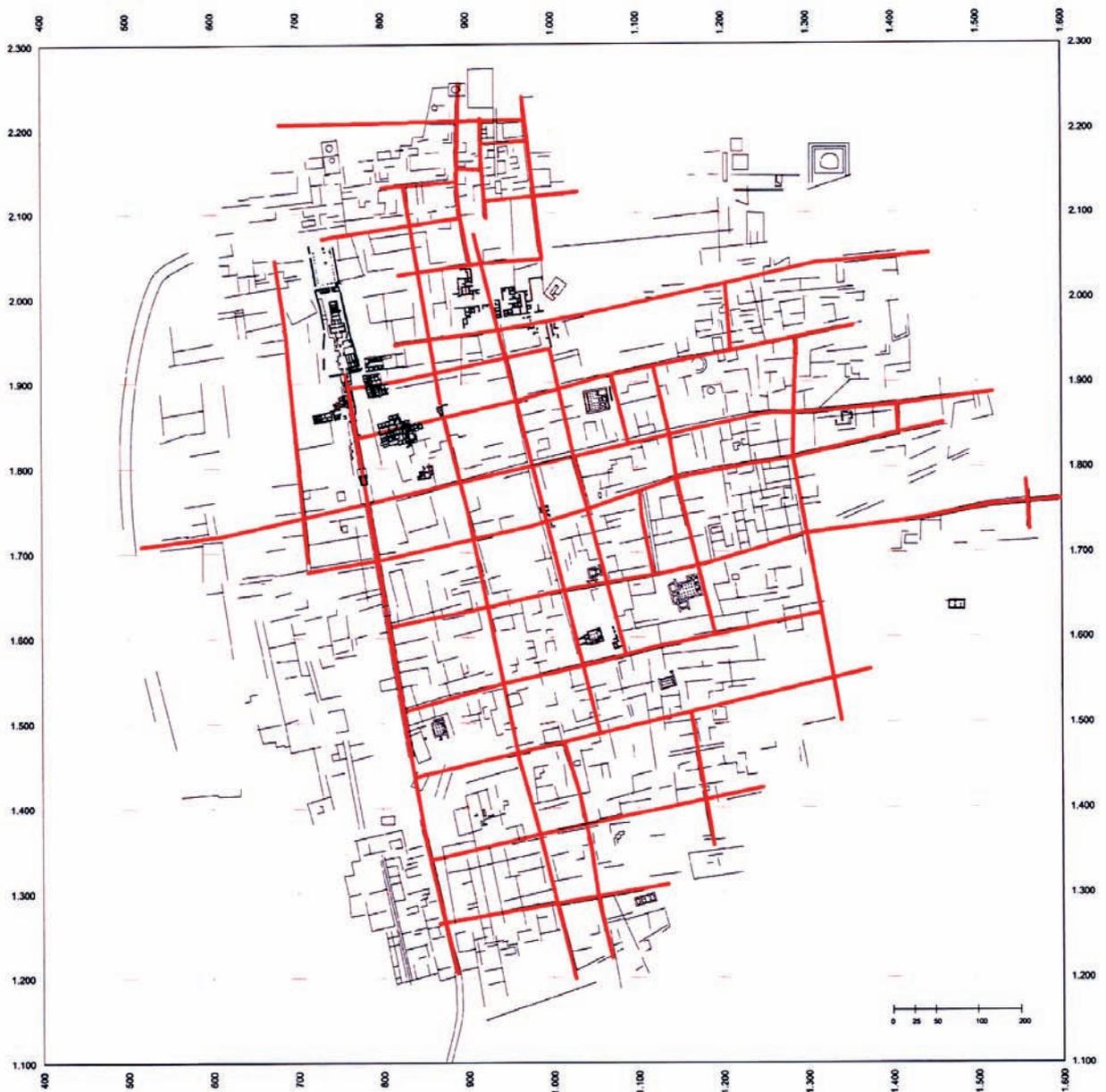
Figure 11. Narmouthis/Medinet Madi plan with street network (in Bresciani-Giammarusti-Pintaudi-Silvano 2006, 257).

Figure 12. Karanis/Kom Aushim plan of Level C (collage from Husselman 1979, Map 11-12).

see at Tebtynis and Bakchias following recent excavations.[19]

The main features common to these small towns in the Fayyum appear to be the temple surrounded by a *temenos* – which sometimes has monumental dimensions – and the *dromos* paved in stone and equipped with one or two kiosks. The processional way was a continuation of the temple inside the town and was used during the numerous feasts to local gods. The foundation of these temples dates back to the beginning of the Ptolemaic period:[20] *dromos* and *temenos* were parts of the same project carried out during the foundation or re-foundation of the settlements, and were probably royal foundations. In the Hellenistic and Roman periods improvements to the temple-*dromos* system can be attributed, in certain cases, to private funding. These cases are known thanks to inscriptions and are expressions of the so-called euergetism.[21]

The plans of these Hellenistic towns are not known in their entirety and thus it is difficult to determine what was new and, therefore, Greek. Papyri attest to the presence of public spaces in the Ptolemaic period, such as the *agora* used as marketplace (Litinas 1997). This is quite understandable as these settlements were neither political nor administrative centres. To my knowledge none of these *agorai* or market places has so far been found or identified. The only monumental public space was found in front of the contra temple of Renenutet at Narmouthis and dates back to the Roman period. It is a rectangular area surrounded by a Corinthian colonnade and is interpreted as a *stoa* by A. Vogliano.

It can be suggested that in these towns the main public space was the *dromos*, a ceremonial road and a religious and social meeting place where people attended and participated in the processions during

19. For the bibliography see Bagnall and Davoli 2011, 117-120.

20. Tebtynis and Narmouthis' *dromoi* have been fully excavated: Rondot 2004, 145-204; Bresciani and Giammarusti 2009. On Bakchias temples with *temenos* and *dromos* see Davoli 2005, 217-224.

21. Inscriptions with dedications of monuments by private individuals are numerous in the Hellenistic and Roman periods. See at least Van Minnen 2000.

the local feasts. Therefore, the *dromos* and the temple complex are the main places where royal power and private euergetism were able to express themselves through monumental apparatus. It is probably not by chance that the only known public square – the *stoa* in Narmouthis – is located in front of a temple, opposite the *dromos*. It has been suggested that a market place was located on both sides of the Tebtynis *dromos* (Rondot 2004, 200) during the Ptolemaic and early Roman periods (before the building of the *deipneteria* under Trajan). This interpretation of the archaeological evidence is consistent with the sources that in some cases combine the *agora*-markets with temples (Litinas 1997, 601).

Great *temenos* and *dromos* are not Hellenistic or Greek inventions, as they are present at many sites in Pharaonic Egypt. They became common features in the *metropoleis* (e.g. Tanis, Pi-Soped, Bubastis, Mendes, Sais, Hibis), especially during the Late Period (26th-30th dynasties). Their presence in third-rank urban settlements can be considered as new for Egypt, but this interpretation could simply reflect our ignorance of older settlements of the same kind and function.

Two pre-Hellenistic settlements have been excavated in the Fayyum, and they are both royal foundations of the Middle Kingdom, built for specific purposes: Kahun, the town of El-Lahun, the pyramid of Sesostris II, and Qasr el-Sagha, a workmen's village north of Lake Qarun. Both of them were planned settlements, built in mud-brick, with parallel rows of houses.[22] Here, there is no evidence of a *dromos* or of a monumental *temenos*. In the first case, the main temple was dedicated to the royal divine cult and was located partly outside the grid.[23] At Qasr el-Sagha the unfinished temple is outside the settlement and at a certain distance from it. In this case, heavy erosion prevents us from gaining a correct idea of the original landscape and the street network that connected the village to the temple and the cemetery.

The famous temple of Renenutet at Gia/Medinet Madi is all we know of the Middle Kingdom settlement there. However, this temple, and probably the settlement around it, continued to be active during the New Kingdom and was expanded in the Ptolemaic period, when courtyards and monumental gates were built in front of the temple. At the same time, altars, kiosks and sphinxes were set up on the paved

dromos. It would be extremely interesting to dig the layers below the *dromos* and investigate the previous phases.

What we would expect from massive new foundations of settlements in the Hellenistic period in an artificial agricultural district newly developed by royal intervention is the use of uniform schematic plans, with an orthogonal or chessboard schema. This appears to be the most efficient way of building artificial settlements, as had already been done in the Pharaonic period (*i.e.* Kahun, Qasr el-Sagha, Amarna East: Kemp 2006, 211-31). However, this was not the case as far as we can see in Hellenistic-period Fayyum, where the plans we know are different from each other.

The plans of the Fayyum settlements are not uniform, although the architectural styles and the building materials are common in both domestic and public buildings. The houses are mostly built of mud-brick and have similar characteristics in plan, architecture and technique from the Hellenistic to the Roman periods. They are generally multi-storey, self-contained, with deep foundations in which cellars are set. These are barrel-vaulted, while the upper stories are always flat-roofed. Houses are provided with open spaces outside the building and attached to it. The mud-brick building technique is very similar everywhere and in every period in the Fayyum, with a few recurring bonding patterns. The most common bonding schema is the so-called English bond. A very common technique is to add a narrow empty space or channel in the thickness of a course and fill it with sand, rubble or mud. A similar channel is placed in the upper course on the opposite side.[24] This technique was applied in Kahun houses (12th dynasty) and is quite common in buildings of different periods in Egypt.[25]

Wood was used in modest quantities in the flat roofs, inside the walls to strengthen them, and as decorative panelling in niches, doors and windows. The use of potsherds in the bonding or inside the bricks was not common.

The mud-brick building technique goes back for millennia in the Egyptian tradition, both for domestic and public buildings. This deeply rooted tradition was not replaced in the Hellenistic and Roman periods in areas where clay and water to make bricks were fully and freely available. This is certainly an Egyptian, rather than Greek or Roman, way of living and building. Mud-brick architecture in Classical-style, with

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22. On Middle Kingdom artificial settlements and the interpretation of their regular plan see Kemp 2006, 211-244.

23. Unfortunately, Kahun is not completely preserved and thus the precise location of the temple within the settlement is unknown. The temple had already been dismantled in antiquity, but its foundations seem to place it half inside and half outside the perimeter wall of the settlement.

24. The most common bonding schema I could register prior to the Late Roman period in the Fayyum settlements are A3 and A12; A17 is also attested. For the numbering of the bonding types see Spencer 1979.

25. The same A12 bonding was used at Trimithis (Dakhla Oasis) in 3rd and 4th century houses.

columns, pilasters and painted gypsum plaster is not frequent, to my knowledge, in the Fayyum.[26]

The absence of Classical-style domestic buildings in the Fayyum does not mean that they were not built, although they were probably less common than elsewhere. In Tebtynis a *peristilium* structure has been found, as well as a few buildings with Classical-style paintings in Narmouthis.[27] Roman period houses with stucco decoration in Classical-style around niches are found at Karanis, while stone elements and painted plaster have been found in a few houses at Dionysias and Theadelphia. Diotimos' villa in Philadelphia is described in some Greek papyri from the Zenon archive (255 B.C.): the *hypodioiketes* built a Greek-style villa with stone foundations and mud-brick walls. Theophilos, a painter from Alexandria, was commissioned to execute the paintings in three rooms and they are described in some Zenon papyri as a "masonry style" variant (Whitehouse 2010, 1014, 1022-23). However, Husson noted that despite the general look of this villa, many are the Egyptian-style elements, in the building techniques, in the disposition of the rooms, and also in its decoration (Husson 1983, 306).

According to papyri and inscriptions, non-Egyptian temples and public buildings were built at several sites, including baths, customs houses, *gymnasia* (attested at Philadelphia and Theadelphia), *grapheia*, banks and public granaries. Only few of these have been found or identified as public buildings. We do not have any idea of the shape and style of the *gymnasia* or of the *grapheia* and the customs houses. On the other hand, *deipneteria* were found at Karanis and Tebtynis, a possible *stoa* in Narmouthis[28], and several fragments of architectural stone decoration in the Classical-style were collected at some places in the Fayyum, pointing to the presence of monumental buildings.[29]

Some public baths of Greek tradition with different *tholoi* for men and women are well attested in Fayyum, not only in written sources but also archaeologically. The bathhouse is a new building introduced to Egypt by the Greeks in every rank of settlement from the 3rd century BC. The available evidence suggests a wide use of the new practice, which spread all over the country until the Late Roman period and onwards.[30] Their dimensions varied, but they were generally of small to medium size. Baths were built among the houses and their heating system would have cre-

ated a lot of waste and smoke. Hips or thick layers of ashes and glazed materials are often piled nearby. The majority of the baths known in the Fayyum are of the *tholos* type, but one with a hypocaust system was built in Karanis in the 4th century (Castel 2009, 229-45).

Urbanism in the Fayyum appears to be a mixture of Egyptian and Greek principles, but not particularly Hellenistic or Classical-style oriented, as one would have thought. The most important temples were Egyptian and the common houses are far from being of Greek tradition. The reasons could be found in the functions of the surviving settlements, founded to host farmers who were mainly of Egyptian origin, and probably in strong local traditions.

2. Dakhla Oasis examples (Fig. 13)

Different plans, architecture and materials show up in other regions, probably in response to different climates, local traditions and available building materials. For example, the building materials used in Alexandria and the settlements to the west of it along the Mediterranean coast are mainly local stone and baked bricks. Sloping roofs with tiles are also attested, because of the wet Mediterranean climate and more frequent rains. Rough stones are the basic material used in the eastern desert and on the Red Sea coastal settlements. In contrast, mud-brick is the most widespread material in the settlements of the western desert oases in all periods.

These oases are in a completely different environment to that of the Fayyum, the Delta and the Nile Valley. The water comes from deep aquifers and the soil is not Nile silt. Ongoing archaeological surveys of Dakhla and Kharga are plotting the human features from all periods on geographical maps, in order to establish site patterns and distribution, as well as population and resources in the different periods. This will give us an insight into the major environmental and landscape changes. Excavations of some major sites are providing useful data, as are texts spread over a wide range of time, but not yet enough to have a clear picture of the historical development and economy of these communities.

At the Dakhla Oasis, the Old Kingdom and First Intermediate period settlements are under excavation

26. Some evidence was found at Tebtynis, Narmouthis, Dionysias, Theadelphia, and Karanis. Domestic buildings with painted rooms (with "panel style" and imitation stonework decorations) are not as frequent in the Fayyum as they are in the Dakhla Oasis. For a view of domestic decoration in Graeco-Roman Egypt cf. Whitehouse 2010.

27. Cf. Bresciani 1976, 25-27; Bresciani, Giammarusti, Pintaudi and Silvano 2006, 245; Silvano 2008; Davoli in press.

28. A stone-paved square, surrounded by a 1st century AD colonnaded portico and then rebuilt in the Late Roman period, was discovered at Marina el-Alamein by a Polish archaeological mission: Bagnall and Davoli 2011, 108 with bibliography.

29. Pensabene 1993, 221-41 lists fragments from Theadelphia, Dionysias and Tebtynis. Some other places must be added to these, including Soknopaiou Nesos, Kom Niqula, Kom Ruqaia, Kiman Fares. A limestone lintel with a Greek inscription mentioning the building of the *gymnasium* gate was found at Theadelphia: I.Fay. II 103. It was built in 150-149 BC in Classical style.

30. According to the Balnéorient research project about 70 baths are known in Egypt to date.
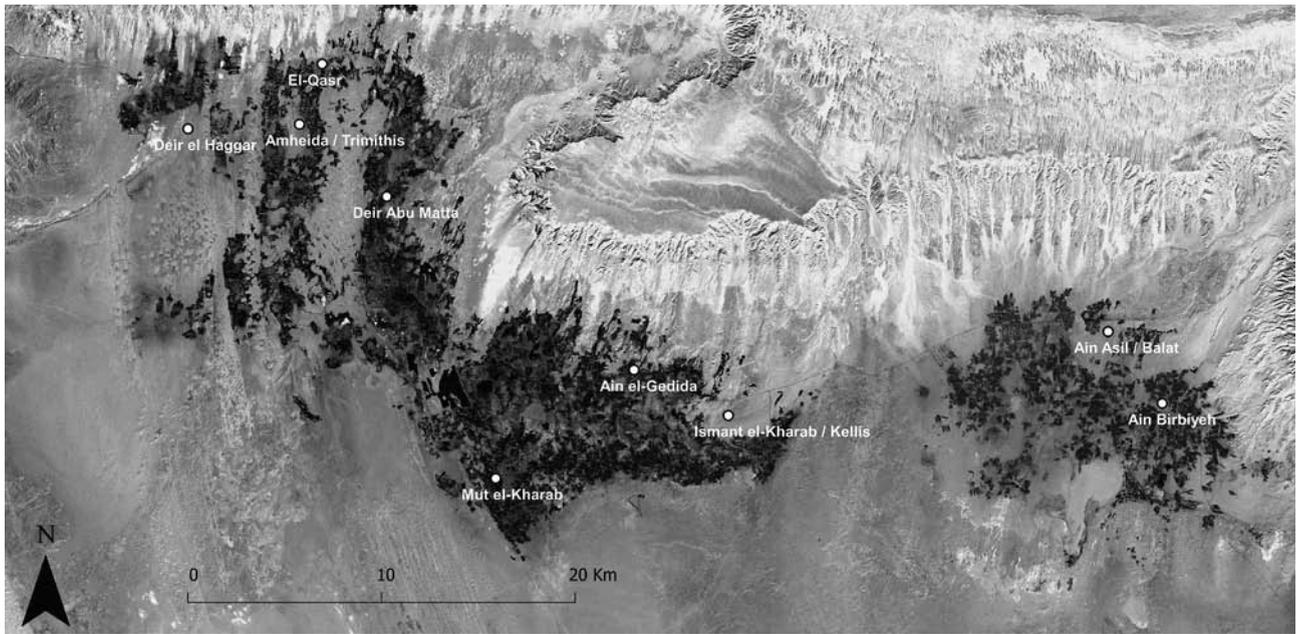
FIGURE 13. Satellite view of Dakhla Oasis showing the main ancient settlements (map by B. Bazzani).

at Ayn Asil (Balat) and Ayn el-Gezzareen, although artefacts also attest to the presence of New Kingdom, Third Intermediate, and Late and Persian Period settlements. So far we do not have a full knowledge of the oasis in the Hellenistic period. The best preserved phases are the Roman and Late Roman: around 250 sites datable to the first five centuries AD, including farms, hamlets, villages, towns, cities, cemeteries, temples, wells, monasteries and fortresses, are spread throughout Dakhla.[31] This evidence testifies to flourishing settlements and a rich agricultural activity in the oasis during the Roman period.[32] A number of Egyptian-style temples were built in the 1st century AD of local sandstone blocks. The temple at Deir el-Haggar was dedicated to the Theban triad by the emperors Nero, Vespasian, Titus, Domitian and Hadrian. It is still standing and surrounded by a mud-brick *temenos*. A colonnaded courtyard in front of the sanctuary and the *temenos* walls are decorated with Classical-style paintings.[33] In the temple at Ayn Birbiyeh, dedicated to Amon-Nakht and Hathor, the recorded emperors are Augustus, Galba, Titus, Domitian and Hadrian. Mothis, the oasis capital, is not preserved, but a great *temenos* still survives and testifies to a long history of

Seth's temple and city going back to the Old Kingdom.[34]

The urban contexts of another two Roman-period temples are still preserved: the major Roman settlements in the Dakhla Oasis, Trimithis (Amheida), in the western part of the region, and Kellis (Ismant el-Kharab) in the east.

A team from New York University[35] has been excavating at Amheida/Trimithis since 2004. According to the pottery and the excavation data, the buildings visible on the surface belong mainly to the 4th century phase. Pottery and objects from earlier periods, found all over the area, point to the presence of a settlement from the Old Kingdom onwards. It was possibly located on the central hill where the temples of Thoth were built in the 23rd and 26th Dynasty and in the Roman period. These temples were dismantled but many blocks were left. The Roman-period temple of Thoth was built by Titus and Domitian in Egyptian style. A great *temenos* surrounded the sacred area, while the *dromos* has not been identified. The complex layout of streets does not reflect a Hippodamian schema or what we could expect from a Late Roman *polis*. (Fig. 14) The settlement is oriented north-south and it once

31. Mills 1999. For reports and bibliography see the DOP website at hyperlink http://arts.monash.edu/archaeology/excavations/dakhleh/index.php#reports. For the temples see Kaper 2010.

32. For a bibliography see Bagnall and Davoli 2011, 140-141.

33. The contemporary use of Egyptian and Classical style motifs in the decoration of temples seems to be peculiar to the Roman-period settlements in the Dakhla Oasis: Whitehouse 2010, 1025.

34. Only part of the temple and the cemeteries survive of the capital of the oasis, Mothis (Mut el-Kharab). The excavations there are being undertaken by Monash Unversity under the direction of C.A. Hope: reports are available at http://arts.monash.edu/archaeology/excavations/dakhleh/mut-el-kharab/index.php.

35. The mission is directed by R.S. Bagnall and myself as archaeological director: for annual reports and bibliography see www.Amheida.org.
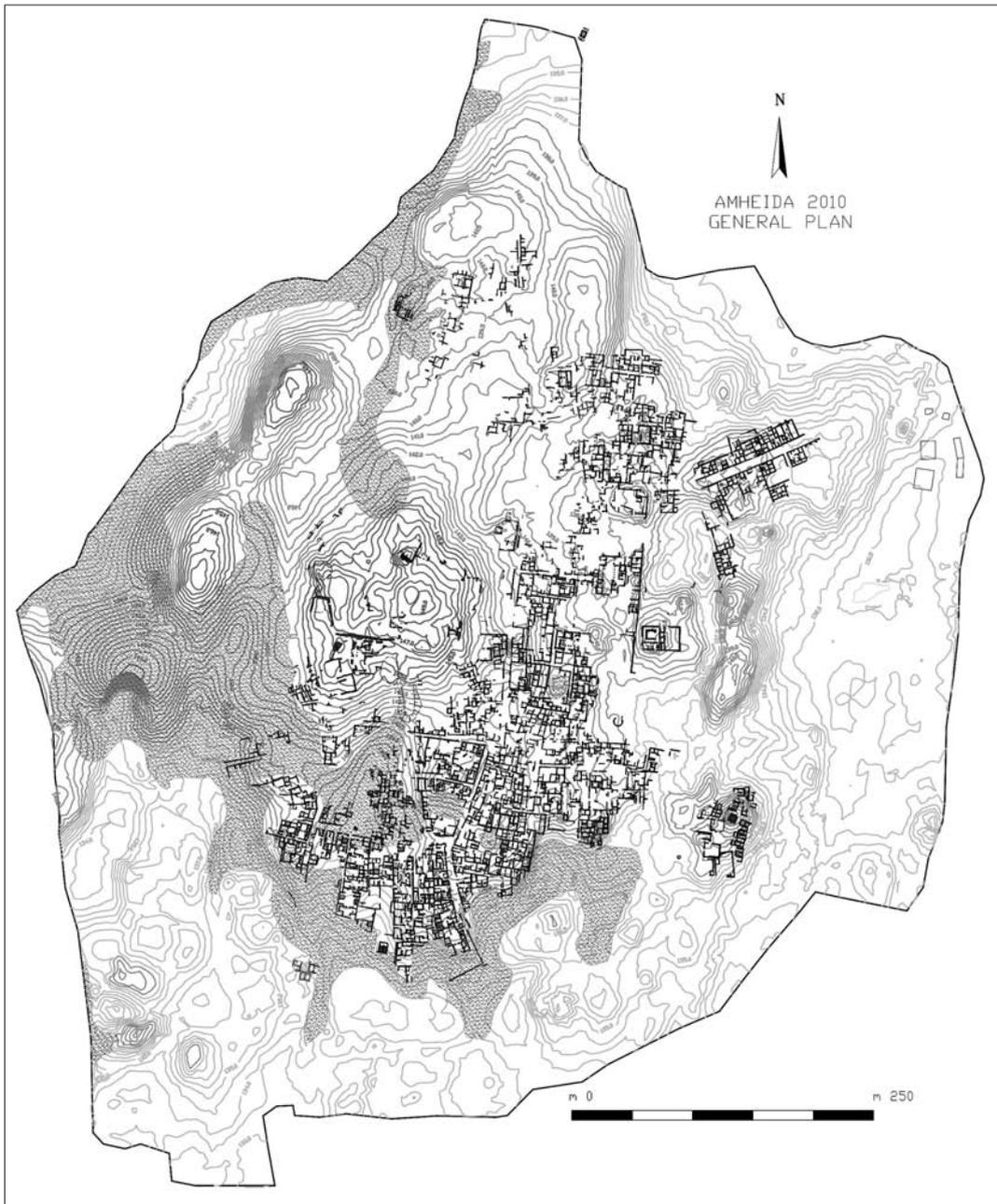
FIGURE 14.
Trimithis/Am-
heida plan (2010,
courtesy of R. S.
Bagnall).

expanded around the main hill following the natural terraces and fossilized sand dunes. The main or wider streets seem to follow the natural slopes and dunes rather than a planned layout. The widest one has a completely different orientation to the others, and appears to be isolated or not directly connected to other streets. Its considerable width (7 m) suggests that it was the most important road, but it ends abruptly and the buildings on both sides are common houses and workshops from the 3rd and 4th cent AD. There appears to have been only one street, of which we can follow some segments running north-south through the city. It was not straight and cannot be defined as a monumental street.

Hundreds of alleys, often very narrow, connected the buildings and draw a confused network rather than regular blocks. The two streets recently excavated look like private passages, closed at one end with walls or buildings and gates linked to houses. Moreover, they turned out to be covered with flat roofs made of palm beams and in part with a mud-brick barrel vault. These two streets bordered on and gave access to the house of Serenos, a member of the city council in the 4th century. This house was located in the central residential area of Trimithis and is now preserved at ground level for about 3 m. It was richly decorated in Classical-style with painted plaster in the main room and in three smaller rooms, although its plan is not properly Greek or Roman. (Fig. 15) The dining room was decorated with geometric panels, different for each wall, at their base and with superimposed rows of figures with Greek mythological motifs (Bagnall; Davoli; Kaper;

FIGURE 15. One of the painted rooms in Serenos' house at Trimithis (courtesy of R. S. Bagnall).

Whitehouse 2006, 26-8). (Fig. 16) An open-air dining area with a sigma feature or *stibadium* was found in front of the house, in the street to the east.

The adjacent building was originally a school, which was then transformed into a working area with a number of mud-brick bins. There remain some benches for the students and painted Greek texts on two walls. The most striking find was the red painted text in Room 15 – a teaching rhetorical verse composition (Cribiore, Davoli and Ratzan 2008) –, which was annexed to the Serenos house and changed its function to a storeroom with a raised wooden floor. The house and the school were built on top of a demolished Roman public bath, whose full extent and precise chronology are still to be defined. Of this public bath a *piscina* or *cisterna,* a *latrina*, a round *laconicum* with hypocaustum, and a great hall with a squared water tub and a *labrum* have been found so far, although the baths were certainly more extensive.

The central area of Trimithis is densely inhabited, with a considerable number of rich and articulated buildings: some of them have wide halls with columns, and many others have a specific plan characterized by the presence of two massive pillars. Most of these buildings are painted in Classical-style and sometimes have decorative appliqués in moulded stucco.

At Ismant el-Kharab/Kellis, several buildings and houses have been excavated since 1986 by a Monash University team directed by C. A. Hope.[36] The settlement was founded in the 1st century AD and flourished until the end of the 4th century AD. Thus, no previous buildings or street network influenced its original plan. (Fig. 17) The published general plan of Kellis concerns only the excavated areas and the canals, wells and ditches surrounding the settlement. Thus, it is not possible to have a full picture of its layout and of the street network. However, it is quite clear that the plan was not based on Hippodamian principles or a chessboard schema.

The main temple complex, dedicated to Tutu by Hadrian (?), Antoninus Pius and Pertinax, is not placed in the centre of the settlement and the *dromos* has not been identified. The annexed *mammisi* was built in mud-brick in the 2nd century, covered with a barrel vault and decorated with paintings that are half-Egyptian and half-Classical (Kaper 2009). A large bathhouse has been identified by a magnetic survey in Area A.

Fourth-century common houses in mud-brick with external courtyards have been excavated (Houses

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36. See the web site of the project at http://arts.monash.edu.au/archaeology/excavations/dakhleh/ismant-el-kharab/index.php.

FIGURE 16. The main room in Serenos' house at Trimithis (courtesy of R. S. Bagnall).
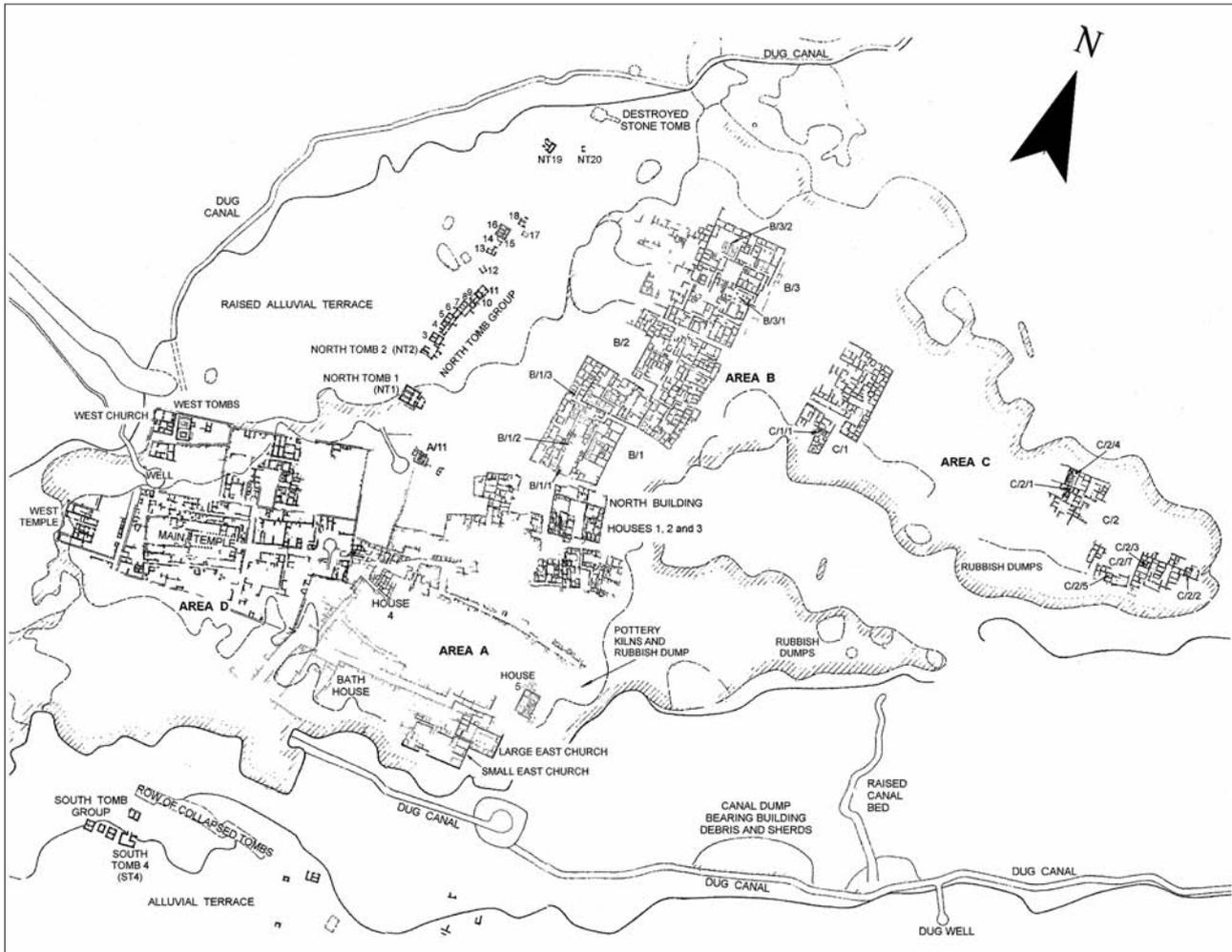

FIGURE 17. Kellis/Ismant el-Kharab plan (courtesy of C. A. Hope).

1-3, Area A). They appear to have been single-storey structures, with no basement rooms and sometimes with a *stibadium* (Hope 1997).

Area B consists of three or more large complexes, of which two are partially excavated. One of them has been interpreted as a possible grand residential building from the late 1st to the 3rd century AD. The other (Structure 1) had two levels and was made up of more than 200 rooms. It was probably used from the 2nd to the late 4th century. Large rooms painted in Classical-style with plant and geometric motifs in bright colours are the most striking features of these impressive buildings (Hope-Whitehouse 2006). In some rooms there are large mud-brick columns, painted and once topped with Corinthian capitals in stucco, of which many fragments remain (Figs. 18, 19).

The architecture, decoration and building techniques are quite similar at Kellis and Trimithis: mud-brick is the main material, made of the local iron-rich clay and including potsherds. Potsherds were heavily used in bonding, especially in the vaults and domes. This is the most common roof shape used to cover rooms, perhaps due to local tradition influenced by the scarcity of wood. Nonetheless, palm beams and palm leafs were also used on the flat roofs of wider rooms. The houses had shallow foundations and no underground rooms, as was common in the Fayyum houses. The richest houses and building complexes had columns and white plaster painted with polychrome paintings; Classical-style capitals and other decorations were made of stucco.

I would say that architecture and decoration at both sites show a combination of local Egyptian and Classical traditions. The same trend is attested in the Roman period cemeteries at Dakhla. A number of monumental tombs in mud-brick are still well preserved at Mothis, Trimithis and Kellis.[37] They are built with mud-brick and sometimes rich decorations with stucco and paintings in Egyptian and Classical styles are still preserved.

At Kellis they have a temple-like plan, with two or more vaulted rooms above ground and a portico in front of the entrance (North Tombs, 1st-3rd cent. AD at Kellis). Mummified bodies and Egyptian funerary equipment testify to an Egyptian cultural environment.[38]

FIGURE 18. Kellis, building B/3/1: collapsed roof and wall paintings in Room 6 (courtesy of C. A. Hope).

37. See also the Roman tombs at Ezbet Bashendi: Yamani 2001.

38. Pyramids and monumental tombs are also present in the cemeteries of the Valley, for example at Tuna el-Gebel, the Graeco-Roman cemetery of Hermopolis Magna. Here the first examples are temple-like tombs (e.g. that of Petosiris) built with stone and dated to the 4th cent. BC. In the Roman period, another kind of tomb appears; they are called house-like tombs and were built of mud-bricks until the 4th or 5th cent. AD (Lembke 2010, 234-40). The house-tombs continue to combine Egyptian –and Classical– style decorative elements made of high quality stucco imitating stonework and painted plaster. At Tuna el-Gebel, Egyptian style paintings became rare from the 2nd cent. AD buildings. This trend towards the prevalence of Classical-style architecture and decoration is consistent with what happened in urban contexts. However, the traditional mummification of the bodies bears clear witness to the continuity of Egyptian funerary beliefs.

FIGURE 19. Kellis, building B/3/1:
the "wallpaper" in Room 1a (courtesy of C. A. Hope).

A great variety of tombs remains unexcavated at Trimithis; they derive from the three millennia of the settlement's existence. Among the various kinds of burial we must mention two truncated-pyramids built of mud-brick. (Fig. 20) Both were built on top of natural hills and are surrounded by several tombs. Another kind of burial is a tower-like shape, with an underground vaulted burial chamber and a superstructure built in Classical style and covered with a dome. At Mothis other pyramid-like tombs have recently been excavated and restored by the local Inspectorate. The general concept is Egyptian, with the burial apartments built in the subsoil, a superstructure in the shape of a truncated pyramid, side chapels and altars. The burial chambers are barrel-vaulted and painted with Egyptian funerary iconography in quite a rough Egyptian style. However, some elements, like the open-air altars and the external painted decoration (with marble-like panelling revetment), are Classical. Mummification was the most common funerary practice attested. The use of pyramid-like tombs was thus apparently quite common in Roman Dakhla. The reuse of a Pharaonic symbol on large-scale buildings during the Roman period on the fringe of the empire is a rather interesting social phenomenon to study.[39]

At Trimithis, they were certainly landmarks and thus must have had a special significance.

2. Conclusion

The evidence collected so far in Egypt concerning urbanization in the Graeco-Roman period is far from being enough to draw an exhaustive picture of this important cultural phenomenon and of its changes in time and space (Renfrew 2008). However, we can try to suggest some general lines of interpretation of Egyptian urbanism, taking into account the remains of cities and towns.

Settlement hierarchy was a matter of fact in Egypt from the time of the Old Kingdom (Bard 2008). *Poleis* and the *nomoi* capitals must certainly be considered as cities, while smaller but complex and densely inhabited settlements can be considered as a third rank towns, followed by villages, which were smaller and simpler. Our picture of Graeco-Roman urbanism in Egypt is not complete if we do not take into consideration the third rank settlements.

As we have seen, the structural layout of the Graeco-Roman settlements of Egypt is not, as one might

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39. Small truncated pyramids in mud-brick have recently been found in a cemetery at Karanis in the Fayyum and are dated to the beginning of the Late Antique period; another pyramid-like tomb in stone has been explored at Tuna el-Gebel and dates back to the 2nd cent. AD (Flossmann and Schütze 2010).

Figure 20. Truncated pyramid at Trimithis (courtesy of R. S. Bagnall).

have expected, uniform and rigorously planned. Chessboard plans and Classical-style architecture can be seen in cities, and perhaps in a few towns, and can be considered as an imposed or imported cultural model introduced by the Ptolemies and later by Roman emperors (Davoli 2010 a, 359-61).

In small towns, the solutions adopted for their plans are not standardized and show regional peculiarities. Archaeological evidence points to the fact that during the Hellenistic period Fayyum settlements must have been smaller and less densely built than in the Roman period. This led to a series of transformations in the urban layout, which became more densely built and organized in blocks. The network of streets and blocks formed, as we have seen, plans that are not uniform and rigorously planned. The orthogonal street plan is the most widespread model in towns from the Ptolemaic to the Byzantine period. However, orthogonality does not mean a rigorous chessboard or a Hippodamian layout. An orthogonal network of streets and alleys can give rise to a less geometric pattern in small or medium-size towns, where uniform blocks generally do not exist. There were also cases, such as Tebtynis, Trimithis, and Kellis, in which quarters with different street alignments co-existed in the Roman period. Fourth-century Trimithis and Kellis were densely inhabited and built with a street network that is difficult

to define as "Roman" (DeLaine 2008, 95-97). Roofed alleys and labyrinthine layout are similar to those of the local medieval-period settlements (known as Qasr in the Oases). Nonetheless, architectural decoration, types of public buildings and textual evidence reveal a widespread Classical culture.

In terms of architecture, we are inclined to think that public buildings in Hellenistic and Roman cities were built with stone and precious materials, as we are used to seeing in the cities of the Mediterranean and the Near East (Gros and Torelli 1988, 373-426). However, these kinds of monumental public buildings are not preserved or archaeologically attested in all cities and towns. For many of the Egyptian cities we do not have any evidence at all, and for some only one or a few monuments are attested. Thus, the question of their monumental apparatus is still open (Bagnall 1993, 47). The remains (not particularly abundant) of monumental Classical stone buildings spread throughout the country has contributed to the idea that at least the Roman cities in Egypt had the same cityscape as elsewhere in the empire, with the introduction of innovations coming from other areas of the empire and particularly from Asia Minor (Bailey 1990). However, we must not forget that most of these cities were built of mud-brick and had few stone monuments. Stone buildings were very expensive,

both in terms of building time and cost, and therefore were limited in number.

The monumental appearance could have also been achieved using less expensive materials, such as bricks and stucco. This technique is well attested in towns and where stone was not available or unnecessary for climatic conditions. Mud-brick continued to be the most widespread and cheapest building material for public or private domestic and monumental buildings, in line with an Egyptian millenary tradition.

Some kinds of buildings, including the office of the *strategos*, the archives, *gymnasia*, *bouleuteria* (city council), *prytaneia* (town hall), *dikasteria* (court of justice), and *macellum* are not attested archaeologically, but they existed and are mentioned in the texts. These circumstances should make us think about the possibility that they were built with perishable and cheaper materials than stone, such as mud-brick, wood and stucco, not only in towns but also in cities.

Examples of Classical-style architecture built with mud bricks still survive, especially in the Oases, thanks to favourable environmental conditions. Tombs, houses, and palaces built in the Roman and Late Roman periods in Trimithis (a *polis* in the 4th cent.) and Kellis show classical decoration, moulded in stucco or painted on plaster. These buildings are neither strictly Classical nor Egyptian in style. Large columns in mud-brick or baked-brick, either simply plastered with mud or richly painted, populated large buildings, temples and churches. They seem to be local evolutions toward an urban Roman style.

Mud-brick monumental architecture was not confined to the Oases, but can be found in the Valley, too.[40] It has been noted that building techniques in Ptolemaic and Roman Egypt were influenced by local traditions, sometimes deeply rooted in the Dynastic period, sometimes derived from the Late Period masonry, originally employed in Egyptian style temples and then also in Classical-style stone buildings (McKenzie 2007, 132-34). During the Dynastic period the great majority of buildings, and sometimes also temples, were built of mud bricks. For example, the pharaohs' palaces, as well as offices and other administrative buildings, were not built of stone. Thus, it is not surprising to find continuity in this tradition in Ptolemaic and Roman Egypt.

Following these considerations, we can recognize some peculiarities in the Hellenistic and Roman-period urbanization of Egypt. Hellenistic and Roman cultures expressed themselves through urbanism and architecture above all in the cities, where the cityscape became, in some respects, very similar to that of the other cities of the Roman Empire, particularly through the use of regular plans and key stone monu-

ments. However, Egyptian traditions and culture were not completely abandoned, as we can see in building techniques, in mud-brick architecture and in religious and funerary customs.

A different situation can be seen in the towns, even those of new foundation, such as those in the Fayyum and Dakhla Oasis. In these settlements we cannot recognize a Classical model plan used as a reference and it seems that local or regional traditions dominated, not only with regard to building techniques and materials, but also to the urban organization of streets and buildings. The *agora*-market did not have peculiar architectural features, while the processional roads-*dromos* became the main public space with a monumental apparatus, at least in the Fayyum towns. In this monumental road we can recognize a synthesis of both Egyptian and Classical traditions. Hellenistic and Roman styles and types of buildings are fully present in these towns, which took on an Egyptian-Classical appearance. In my opinion, the concept of a schema – the so-called top-down model – imposed by the new authority in a conquered country in order to communicate a more rational way of life and administration is not a reality in the towns or third rank settlements (Butzer 2008, 83).

In the towns, the combination of different traditions led to a general homology among settlements in the same region due to local customs, as well as to a national homology due to the new non-Egyptian-style architecture, which reflected new institutions and a new lifestyle. The peculiar character of urbanism in Graeco-Roman Egypt derived from the combination of regional traditions within a Classical framework.

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40. Tombs are better preserved than other buildings in the Nile Valley, but their presence suggests that a monumental building in mud-brick would also have been present in the settlements.

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