

HOUSES, PALACES AND DEVELOPMENT OF SOCIAL STRUCTURE IN AVARIS¹

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I. INTRODUCTION

In the following article, I will be endeavouring to illustrate a number of points which may be of significance when trying to assess a settlement. This study will focus on the site of Tell el-Dab^ca, drawing on the wealth of experience gained at this spot in over 40 years of fieldwork.²

Settlements should always be viewed in a wider perspective, looking at the ancient environment, trying to position it within the primeval landscape, showing the river-courses, the backwaters, marshes, overflow lakes, roads and, in the case of towns in the Delta, its position in relation to the sea. Such map-oriented evaluation may reveal to some extent the function of a settlement.

Geophysical surveying is a great innovation and gift to archaeology as it reveals relatively fast large areas of settlement structure, its boundaries and topographical features such as Nile channels and lakes. What it does not show is the date of the structures. Buildings visible in the evaluation records of multiple strata sites may show architectural features from different periods in one image, even if they have the same orientation. Ancient strata are not necessarily horizontal but also covered hills and depressions. This is also true in the Delta with its turtlebacks and levees. Levelling surfaces for agriculture may take away parts of settlements and expose older strata side by side with younger ones. We are also unaware of the development of settlements which may have grown according to a horizontal stratigraphy. What cannot be recognized by such surveys is the vertical sprawl of a settlement and hidden features such as turtlebacks and water branches covered by later settlements. Such details can only be revealed by excavation and the hidden topographical features by coring. Those activities at a multiple stratum site take

a long time and, even after more than four decades of research at Tell el-Dab^ca, we only have windows of stratigraphic development at our disposal. In our reconstruction of town development we have to rely on such windows and an overall view which also factors in the results of the surface surveys.

Size and types of buildings, especially when viewed in combination with the vertical development, show the rank and standing of inhabitants in comparison to other districts which have larger or smaller buildings. What is of specific importance is the comparative assessment of compactness of settlement quarters. The degree of inner development concerning the intensity of using the space can be measured and compared. Such studies may help to recognise the social differentiation and shifts in the social development of a town. It is most interesting to see if evidence at the surface perpetuates previous development at the same spot or if a dynamic development has changed the topography of a town. The difficulty is that we have only a patchwork at our disposal and are obliged – especially working with big towns – to infer insights from limited area-samples.

II. SIZE, POSITION AND FUNCTION OF SETTLEMENT

The size and geographical position of a settlement shows its importance and, to some extent, the function of a town. It helps to determine the position of the town within the hierarchy of settlements. The growth of Tell el-Dab^ca from a moderate provincial town of ca. 15–25 ha of the 12th Dynasty to a town of c. 75 ha in the late Middle Kingdom and finally to a maximum of c. 250 ha in the early Hyksos Period shows that the place all of a sudden gained major political importance (Fig. 1). Originally we estimated the size of the town in the Hyksos Period at c. 250 ha, but recent surveys have added to the precision of topographic fea-

¹ For English editing I am indebted to Adrian Melman, for footnote editing Irene Kaplan, for providing the illustrations to Nicola Math from SCIEM 2000.

² For the site see BIETAK 1996a; 2001. Since then: ASTON 2004; BADER 2009; BIETAK, DORNER & JÁNOSI 2001; BIETAK &

FORSTNER-MÜLLER 2005; 2006; 2007; BIETAK, MARINATOS & PALYVOU 2007; FORSTNER-MÜLLER 2008; HABACHI 2001; HEIN & JÁNOSI 2004; KOPETZKY 2009; MAGUIRE 2009; MÜLLER 2008; SCHIESTL 2009.

tures, especially recognizing water basins, old water channels and flood areas which are unsuitable for building.³ We therefore have to correct the size of the settlement to 222–228 ha minimal size when including the area of ‘Ezbet Machali⁴. It is, however, perfectly possible that c. 20 ha more could be expected east of ‘Ezbet Mehesin on the other side of the old water branch F/3 and not yet investigated by geomagnetic survey, but initially explored by walking along the surface. If this area could be verified as settling ground of the IInd Intermediate Period we would as a result arrive at the originally estimated c. 250 ha.

It is difficult to compare sizes with residential towns as Memphis because we do not know the approximate extension of this settlement during the Middle Kingdom.⁵ According to the map with reconstructed mounds by B.J. Kemp, the pre-New Kingdom town cannot be traced.⁶ The limitations of the river on the east side which distinctly delineate the eastern edge of the ruin fields of Memphis,⁷ the smaller branch explored on its western side⁸ and the remains of ruin mounds would accord Memphis between 550 to 600 ha in the Late Period – a size it may have already reached in the Ramesside Period with its enormous temple precinct of Ptah and the precincts of the other temples (Fig. 2B).⁹ This would be comparable to other residential towns such as Amarna (early phase c. 300 ha, finally c. 600 ha)¹⁰ and Pi-Ramesse (c. 550–600 ha).¹¹

Before the New Kingdom, in the Middle Kingdom and IInd Intermediate Period an enclosure wall defines the eastern limit of the town.¹² The West seems to border on a small Nile branch,¹³ which would limit the East-West diameter to about 400 m. Also the North-South extension was more restricted

than in the New Kingdom and can be estimated at a maximum of 2000 m, perhaps only 1500 m. This would limit the town size to a maximum of 80 ha. However, we have to bear in mind that Memphis, as the name reveals to us, was most likely a twin town and we also have to take into consideration that, besides the town around the Ptah temple called *Hwt-ka-Ptah* on top of the ruins of the pyramid town of Pepi I (Men-nefer-Pepi) another living quarter was kept alive till our day with the village Saqqara (Fig. 2A). This remnant of a pyramid town of the late Old Kingdom must have become an integral part of Memphis, otherwise, the change of name is unthinkable.¹⁴ Its living space could be estimated at a quarter till a third of Memphis. In the late Old Kingdom and in the Middle Kingdom the size of the Pyramid town may even have equalled Memphis of that time. This would make the name transfer more understandable. The two towns may have been connected by a dam-road and a ferry across the minor Nile branch, reconstructed by the EES team in the West as an active Nile branch.¹⁵ Right until the present day, the villages of Mit Rahina and Saqqara have been connected by a dam road. In the Old and Middle Kingdom the double town could have gained 120 to 150 ha and was most probably the largest settlement in Egypt.

Abydos covered an area of c. 2 ha¹⁶ and was enlarged to c. 3.7 ha,¹⁷ Elephantine occupied between 2 and 2.5 ha in the early Old Kingdom¹⁸ then growing in the late Old Kingdom and in the Middle Kingdom to over 8 ha.¹⁹ Edfu grew to approximately 8–9 ha at the same time,²⁰ Hierakonpolis (c. 8.5 ha) and El-Kab in the Old Kingdom covered approximately the same space,²¹ Dendera in the Old Kingdom is difficult to measure, but seems to have been quite small (2 ha?),

³ See contribution of I. Forstner-Müller in this volume.

⁴ According to the recent survey conducted by I. Forstner-Müller, T. Herbich and C. Schweitzer.

⁵ KEMP 1977a, 192–195, fig. 7; JEFFREYS 1985, 68, fig. 20; JEFFREYS 1996, 287–291; JEFFREYS 2006b, 166; JEFFREYS & SMITH 1988, 58.

⁶ KEMP 1977a, 192–195, fig. 7. JEFFREYS 1985, 4–10 dismisses Petrie’s estimate of the extent of Memphis as it was not based on modern survey methods and, although Jeffreys has contributed with his survey to important topographical fixed points, he does not himself commit to new estimates.

⁷ SMITH & JEFFREYS 1986, figs. 2–3. I am indebted to Claus Jurman for pointing out to me topographic features about Ancient Memphis.

⁸ Even if this branch may have been active only during the Early Dynastic Period, it remained an old water branch not suitable for expanding a settlement. See JEFFREYS & GIDDY 1992, 7, fig.; JEFFREYS & TAVARES 1994, 155–157, figs. 5–6.

⁹ JEFFREYS 1985, 48–56, pl. 2.

¹⁰ KEMP & GARFI 1993, fig. 10.

¹¹ BIETAK & FORSTNER-MÜLLER in print, 51.

¹² SMITH & JEFFREYS 1986, 94–95, fig. 4, resistivity feature; JEFFREYS & MALEK 1988, 17, figs. 1–2 (FAM).

¹³ GIDDY, JEFFREYS & MALEK 1990, 12–13, p. 3 w. fig. 2.

¹⁴ Cf. MALEK 1997, 94–95 w. fig. 1.

¹⁵ A canal/waterway separating the city from the necropolis is referred to in Late Period and Ptolemaic sources. Cf. THOMPSON 1988, 10 w. n. 17, pp. 12, 21.

¹⁶ KEMP 1977a, 192–195, fig. 7.

¹⁷ See ZIERMANN 1993, 36, fig. 13.

¹⁸ KEMP 1977a, 192–195, fig. 7;

¹⁹ ZIERMANN 1993, figs. 3, 8, 22, 41; ZIERMANN 2003, 112–128, fig. 50.

²⁰ KEMP 1977a, 186–189, figs. 3, 6; ZIERMANN 2003, 128, fig. 50.

²¹ ZIERMANN 1993, 36, fig. 13.

°Ayn Asil the remote capital of the Dakhla Oasis in the late Old Kingdom ended up as 3.6 ha.²² Abu Ghalib (early Middle Kingdom) could be estimated at c. 3.4–4.2 ha,²³ the town of Kahun at 14 ha,²⁴ Tell el-Yahudiya in the IInd Intermediate Period 21 ha (the extramural settlement space being unknown).²⁵ Of considerable size is the fortress of Tell Hebwa north-east of Qantara in the New Kingdom, identified with the frontier town Zaru.²⁶ It covered an area of c. 80 ha.²⁷ It is not fully explored how large the town had been in the IInd Intermediate Period but its size in the New Kingdom is remarkable indeed. Compared to other towns in Egypt at that period Tell el-Dab^a was absolutely the biggest and it seems that it was also the biggest settlement in the whole of the Eastern Mediterranean region. Royal towns in Syria, like Ebla, Hazor, Ugarit and Qatna, measured between 60 ha to 100 ha, albeit still dwarfed by Tell el-Dab^a which must figure even without historical records as one of the biggest residential towns in the Near East at that time. In Ramesside times, the towns according to recent estimates expanded as much as 600 ha.²⁸

We shall see that size also is an indicator for estimating the importance of palaces. The town was situated east of the Pelusiac branch of the Nile and was one of the first Egyptian settlements of the Middle Kingdom known to us, constructed – as it was – east of the Pelusiac (Fig. 1). Till then, settlements could be found only behind (west of) this river.²⁹ The site was protected eastwards by the biggest drainage system of Egypt, the Bahr el-Baqar which poured at that time into huge overflow lakes which used to form a barrier of perennial swamps towards the east. Coming from the Sinai, any intruder was forced into a narrow loop-hole formed by those swamps and the Pelusiac. The town which controlled this entrance was Tell el-Dab^a, which was for some time Avaris, the capital of the Hyksos and later the southern part of Pi-Ramesse, the capital of Ramses II and his successors.

We also have historical information about Avaris and Pi-Ramesse besides their function as residential

towns. According to the second stele of King Kamose, there had been moored at Avaris hundreds of ships which Kamose boasts that he had plundered and carried away:³⁰ “... *I did not leave a single plank belonging to the hundreds of ships of new cedar filled with gold, lapis-lazuli, silver, turquoise and innumerable bronze battle axes, apart from moringa-oil [more likely olive oil], incense, fat, honey, ... and all precious woods of theirs, and all the good products of Retenu. I carried them off completely...*” According to Papyrus Anastasi III, 7, 5–6, Pi-Ramesse was “...*the marshalling place of thy [i.e. the pharaoh’s] chariotry, the mustering place of thy army, the mooring place of thy ships’ troops...*”³¹ Avaris had also been right up to the 20th Dynasty according to inscriptions on *naos* doors, now in the Pushkin Museum in Moscow, a harbour if not *the* harbour of Pi-Ramesse with a temple for Amun of its own.³² The texts testify that Avaris and Pi-Ramesse had been harbour-towns and naval bases besides being military strongholds.

We are now in the lucky position of being able to verify the harbour by post-mortem. Geophysical surveys conducted by Irene Forstner-Müller, Thomasz Herbich, Christian Schweitzer and Michael Weissl have revealed a huge harbour basin, with an inlet from the Nile and an outlet leading back to the river (Fig. 3).³³ This looks like a facility for busy river traffic. The paleogeographers Jean-Philippe Goiran and Hervé Tronchère from the Université 2 in Lyon were able to verify the harbour function.³⁴ Another lake within an old water channel was found further in the south. It was according to the French paleogeographers no harbour basin but could have been, however, only a mooring place for the palace of the middle Hyksos Period, probably belonging to King Khayan.³⁵ A second harbour was found at the river branch itself (see the contribution of Irene Forstner-Müller in this volume). What is not yet settled definitely is the date of those different harbours.

The northern basin measuring c. 450 to 400 m is rectangular and with its northern edge parallel to a

²² SOUKIASSIAN, WUTTMANN & SCHAAD 1990, fig. 1; ZIERMANN 1998, 340–343, fig. 1, 355–357, fig. 8.

²³ According to the map in LARSEN 1941, 2, Fig. 1. The original estimate of LARSEN 1936, 50 of 600 × 500 m seems to have been on the high side.

²⁴ Measured from PETRIE 1891, pl. 14.

²⁵ PETRIE 1906, pls. 2 and 22.

²⁶ ABD EL-MAKSOUH 1998, 111.

²⁷ ABD EL-MAKSOUH 1998, 128, fig. 1.

²⁸ BIETAK & FORSTNER-MÜLLER, in print, 51.

²⁹ VAN DEN BRINK 1987, 17–19.

³⁰ HABACHI 1972, 37.

³¹ Translation CAMINOS 1954, 101.

³² TURAYEV 1913, with pl. 13; see BIETAK 1975, 30, 205–206.

³³ FORSTNER-MÜLLER 2009; BIETAK 2009.

³⁴ TRONCHÈRE *et al.* 2008.

³⁵ Within this basin according to Hervé Tronchère and Jean-Philippe Goiran only one borehole produced sediments typical for harbours. The others were negative in this respect. It could have been that the sediments were washed away or that it was not a harbour but only a berth connected to the time span of the palace.

long enclosure wall of the Ramesside Period, which runs in its eastern parts few meters north of and parallel to a fortification wall of Horemheb. The Ramesside wall covered the inlet canal, which means that the basin was active before and still visible during this period. It could even still have been in operation during this time if the outlet canal was used as link to the Nile system (Fig. 3). The fortification wall of Horemheb may have also wrapped right around the inlet canal, but is not preserved at this spot, not having been as deeply sunken as the Ramesside wall. Reflecting on the situation during the late 18th Dynasty, we think it would also have been reasonable to secure with a bulwark a harbour not far from the sea, given the fact that we have from as early as the time of Amenophis III evidence of raids of seafarers at the river mouths³⁶ and that some time later Ramses II should catch Sherden trying to make some raids.³⁷

Several authors have addressed already the question if the major naval base of the 18th Dynasty Peru-nefer had been located at the same site as Avaris and Pi-Ramesse.³⁸ Until a short while ago no antiquities which would have supported such a suggestion had been found. The majority of Egyptologists even now follow the *opinio communis* that this naval base was situated at Memphis.³⁹ Despite several supporting grounds, this identification has to be refuted. Firstly, a palatial compound of royal dimensions (5.5 ha = 13 acres) from the time of Tuthmosis III and Amenophis II has been found and extensively excavated (Figs. 3, 28). Both pharaohs can be linked to Peru-nefer, especially the latter. The palaces together with the aforementioned harbour basin are strong contenders for the site of the most important naval base of the Tuthmosid Period. The physiography of the river Nile is a

more compelling argument to rebut the location of Peru-nefer at Memphis. Before the construction of the barrages, the geographers of the French expedition attest that, during the drought period during the months January till June, river navigation became so difficult as to come to a halt altogether in the months before the coming of the flood.⁴⁰ The Nile shrank to one fifth of the normal volume.⁴¹ We should add that, during January and February when Nile traffic was still possible, seafaring in the Mediterranean around Egypt stopped because of winter gales, fog and navigational difficulties under such circumstances.⁴² This would reduce down to six months the operation of a harbour for more than 200 km (120 miles) inshore, whilst ships from harbours within the range of the Mediterranean could also continue sailing and landing during the drought period (March till the coming of floods in July). It is particularly interesting that all harbours in deltaic landscapes – if in the Rhine Delta or in the Indus and Ganges Delta – can be found between 5 km to 40 km inshore. It is the tides which help navigate past the shallows created by sediments at the river mouths. In the Mediterranean where the tides are only moderate easy access to the sea could be created by dredging the river channels. This factor would mean placing Peru-nefer within range of the sea.

It is also unthinkable, from a strategic point of view, that the major naval base of Egypt should have been situated 200 km from the sea when warfare in Asia made fast reaction necessary. The conclusion drawn from this makes the continuity of Canaanite cults from Avaris⁴³ via Peru-nefer⁴⁴ to Pi-Ramesse⁴⁵ fall into place.

Seafaring and harbours bring about trade, in this case with the Near East, Cyprus and during some

³⁶ PORTER & MOSS, 1934, 21(196); YOYOTTE, 1949, 63, 67–69; KITCHEN, 1979, 290; 1996, 120; W. HELCK, 1958, 1821 (text); HELCK, 1979, 133, no. 5–7; 1984, 272: 1821 (translation).

³⁷ KITCHEN, 1982, 40f. In another translation variant: KITCHEN, 1996, 120.

³⁸ Already SPIEGELBERG 1927, 217, was of the opinion that Peru-nefer was situated in the Delta. Its association with Pi-Ramesse because of the similarity of the Canaanite cults at both sites was first suggested by DARESSY 1928–29, 225, 322–326; see also GAUTHIER 1929, 141–2. HABACHI 2001, 9, 106–107, 121, insisted that Avaris, Peru-nefer and Pi-Ramesse represent a continuity. See also ROEHRIG 1990, 125–6. NAVILLE 1891, 31, pl. 35 [D], found an inscribed stone of Amenhotep II that mentions a cult of Amun-Ra “who resides in Peru-nefer”, and he thought that this site should be located at Bubastis.

³⁹ BADAWI 1943; 1948; GLANVILLE 1931, 109; 1932; HELCK 1939, 49–50; 1971, 160, 166, 447–448, 456, 460, 471, 473,

501; JEFFREYS & SMITH 1988, 61; EDEL 1953, 155; KAMISH 1985; 1986; DER MANUELIAN 1987; SÄVE-SÖDERBERGH 1946, 37–39; STADELMANN 1967, 32–35; ZIVIE 1988, 107.

⁴⁰ LE PÈRE 1822, 240–241. See also CLOT 1840, 495, and REDMOUNT 1995, 134.

⁴¹ WILLCOCKS 1899, 46–48; pls. 7–8; BAUMGARTEN (ed.) 1981, 21.

⁴² YARDENI 1994, 69; STAGER 2003, 243.

⁴³ BIETAK 1981, 247–253; BIETAK 1996a, 36–48; 2003a, 13–20; 2003b, 155; MÜLLER 2008, 323–351, 381–384 shows that the cult practised in the Canaanite temples at Avaris continued at least into the middle of the 18th Dynasty.

⁴⁴ STADELMANN 1967, 32–47, 99–110, 147–150; COLLOMBERT & COULON 2000, 217.

⁴⁵ DARESSY 1928–29, 326; STADELMANN 1967, 148–150; UPHILL 1984, 200–212, 212, 23323–23324, 245 (Anta), 246 (Astarte), 252 (Reshep), Seth (252–253). There was also a waterway at Piramesse called “the [...] waters of Baal” (papyrus Anastasi III, 2.8; see CAMINOS 1954, 74).

periods with the Aegean. It is therefore understandable that, at the site of Tell el-Dab^a during the era of the late Middle Kingdom, the Second Intermediate Period and also of the New Kingdom more imports in the form of pottery can be found than at other places further upstream.⁴⁶

Summing up, the function of Tell el-Dab^a can be identified as harbour town, trade centre, naval and military base and, last but not least, as a royal residence of the 14th and 15th Dynasties, probably also as a part-time residence during the reigns of Tuthmosis III, Amenophis II and at the end of the 18th Dynasty under Horemheb. Together with Qantir, it was also the residence town of the 19th and, to a certain extent, of the 20th Dynasties. During the late Middle Kingdom and the Second Intermediate Period, the population was largely of Near Eastern origin, as borne out by physical anthropological studies.⁴⁷ This applies mainly to the male population, whereas the female population type was different but also shows Near Eastern features. The culture was in the 12th Dynasty purely Egyptian⁴⁸ and shows from the late 12th Dynasty onwards features of the Syro-Palestinian Middle Bronze Age culture with acculturation to the Egyptian civilisation.⁴⁹ From now onwards till the end of the Hyksos Period, Near Eastern and Egyptian features merge, but the Near Eastern ones keep their identity until the beginning of the New Kingdom, especially in religious and funerary respects. What is amazing is that, after the political turning point and Avaris was taken by Ahmose, the cultural mix of ceramic production, typical of the eastern Delta, continues unbroken till the Tuthmosid Period.⁵⁰ This is an indicator that the majority of the Near Eastern population which carried Hyksos rule right across Egypt was not expelled but stayed on the spot, despite the town being abandoned at least in part.⁵¹ The intermingled cultural features of Avaris were carried over into the Ramesside period. The most conspicuous part of it had been of course the continuation of the Canaanite cults,⁵² especially the cult of the Canaanite storm god⁵³ under the name of the Egyptian storm god Seth.⁵⁴ The most prominent monu-

ment representing those syncretistic religious features is the so-called 400 Years'-Stela, found in Tanis, but originating from the Seth temple at Avaris (Fig. 5).⁵⁵

III. STRATIGRAPHY AND DEVELOPMENT

Knowledge of the vertical dimension of a site is most important for tracing its development in time. Many sites grow from a core settlement, shift with its centre in space, shrink again and/or are abandoned when the environment changes. This happened in the Delta mainly in connection with changes in the regime of the Nile. Tell el-Dab^a is one of the few test cases in Egypt where we know to some extent the origin and some steps of the horizontal expansion of the settlement. We have 17 excavation areas⁵⁶ at our disposal, which act like windows for us to judge the vertical stratigraphy at different spots (Fig. 6). Some of those excavation areas as A/II, F/I, F/II, H/I, H/III, H/VI are quite large and cover more than 1000 m² some of them 8000 m². Those areas do not yield all the same strata. Some encompass the time of early occupation, such as 'Ezbet Rushdi (R/I), whilst the medium and the late strata are missing after being destroyed by constant agricultural levelling. Other areas (A/V) are lacking in early stratification with the town being much smaller and the excavations missing its core. From those 15 windows into the earth, akin to working on a mosaic where large parts are missing, we are forced to reconstruct the spatial development of the town and, as we are lacking in some of the evidence, our conclusions will to some extent remain rudimentary.

In Tell el-Dab^a we have some 25 phases starting from the early 12th Dynasty or probably even earlier and lasting with intervals right up to the Late Period (Fig. 7). Some phases are easily identifiable even at excavation sites at long distances from each other. They show distinct architectural features and specific brick material. The change of focus heralds a major new building phase. Planned settlement- or palatial structures can be quickly recognised as stratigraphic units. Of special importance are emergency

⁴⁶ BADER 2009.

⁴⁷ WINKLER & WILFING 1991, 120, 139–140.

⁴⁸ CZERNY 1999, 129.

⁴⁹ BIETAK 1981, 283–288; SCHIESTL 2009.

⁵⁰ BIETAK in print a.

⁵¹ BIETAK in print a.

⁵² BIETAK 1990.

⁵³ CORNELIUS 1994; GREEN 2003.

⁵⁴ BIETAK 1990; SCHNEIDER 2003; ALLON 2007.

⁵⁵ SETHE 1930; MONTET 1931; STADELMANN 1965; GOEDICKE 1966; 1981; BIETAK 1990, frontispiece; BIETAK, HEIN *et al.* 1994, 279–281.

⁵⁶ A/I–V; E/I, F/I–II, H/I–VI, R/I–II.

graves found between phases G and F in two excavation areas, which are c. 500 m distant from each other. They represent stratigraphy markers. Another stratigraphy marker is abandonment of a settlement followed by a hiatus. Sprawling architectural precincts make evaluation of stratigraphy easy, but still require differentiation of the internal development of the district. Assessment of the stratigraphy of ordinary settlement quarters where houses are not altered or renewed at the same time is difficult (Fig. 8). Such stratigraphies require careful observation of the relationship which houses bear to each other, especially across streets. When projecting such settlement districts over a wide area, it is necessary – from the building material and introduction of new architectural features – to define the features punctuating this settlement stratigraphy and to try to recognise waves of settlement renewal.⁵⁷

The phases of particular importance with regal presence were the Hyksos Period (Avaris: Ph. E/2–D/2), the 18th Dynasty (Peru-nefer: Ph. D/1–C/1) and the late 18th and the 19th Dynasty (Pi-Ramesses: Ph. B/1–3). The time before that was equally important showing, as it does, a colonisation phase with two rigid, orthogonally planned settlements on either side of the harbour (Basin 1) which, at that time, could have been a natural lake. The western settlement was constructed in the late 11th or the early 12th Dynasty at site F/I (Ph. N/3–1 west of Tell el-Dab^a) and is of unknown size (Fig. 9a).⁵⁸ The eastern one shows an occupation from the middle 12th Dynasty onwards in area R/I (Ph. L–I) ‘Ezbet Rushdi. At Ph. K we were able to turn up a settlement around a temple with a memorial cult of the founder of the dynasty Amenemhat I. The temple was constructed posthumously under Sesostri III.⁵⁹ The settlement also has features of rigid planning within a square enclosure wall, as revealed by the survey (s. contribution of I. FORSTNER-MÜLLER in this volume). At that time settlement seems to be confined to an area of c. 7.5 ha east of ‘Ezbet Rushdi.

Those two settlements were purely Egyptian. While the western settlement was abandoned during the era of Sesostri I,⁶⁰ the eastern one – according to the material collected so far – was founded after-

wards during the time of Amenemhet II.⁶¹ There seems to be a hiatus between the two settlements, the first colony having been abandoned for one reason or the other.

Of exotic interest is the time of the late 12th Dynasty with a settlement of Canaanites southwest and south of ‘Ezbet Rushdi (ph. H).⁶² They were proponents of a mixed Egyptian and Syro-Palestinian Middle Bronze Age culture, but their spiritual cultural features are purely Canaanite, such as burial customs and, soon afterwards, the construction of temples of Near Eastern type. Also the first houses are of Near Eastern tradition (Fig. 12), to be followed soon afterwards by the adoption of Egyptian types of houses. What is striking is that the new settlers concentrated west, south and probably north and east of the water basin identified as harbour (Basin 1). It is possible that their arrival had something to do with the harbour function, but the time span of Basin 1 still needs to be investigated further and it may be difficult to establish stratigraphic relationship as, doubtless, the basin was dredged and enlarged over time.⁶³ It is, however, striking that the main orientation of late Middle Kingdom and IInd Intermediate Period strata in areas A/II and A/IV is parallel to the eastern edge of the harbour basin (Basin 1).

The settlement differed from the Egyptian settlement at ‘Ezbet Rushdi as spacious plots were assigned to each house. We do not yet know how long the Egyptian community at ‘Ezbet Rushdi were able to preserve their identity from the new settlers. Judging from pits with waste material, cut from removed strata, it seems that in the middle of the 13th Dynasty (Phase G or F) cultural and ethnic change had taken place and that, from then onwards, all inhabitants of this town were of Near Eastern origin. The trade with the Levant boomed during the 14th Dynasty around 1700 BC to slow down afterwards during the Hyksos Period. The settlement grew during the 13th Dynasty to an amazing area of about 60 ha (Fig. 9b). It shrank at the end of Ph. G/1–3 most likely due to an epidemic which had afflicted the town.⁶⁴ At the beginning of the Hyksos Period the town grew rapidly to c. 250 ha (Fig. 9c). Its imports from the Levant decreased constantly

⁵⁷ BIETAK 1976.

⁵⁸ CZERNY 1999, 17–19.

⁵⁹ BIETAK & DORNER 1998, 16–27.

⁶⁰ Ceramic evaluation by CZERNY, 1999, 129.

⁶¹ CZERNY 1998, 41–46 and still unpublished further analyses on material from ‘Ezbet Rushdi.

⁶² BIETAK 1984, 324–325, fig. 3.

⁶³ Evidence for a use of the inlet canal in the 12th Dynasty was provided by still unpublished radiocarbon dates from sediments (kind communication by Hervé Tronchère, Université Lyon 2).

⁶⁴ BIETAK 1984, 333–340, fig. 9.

from 28.7% before the Hyksos Period to only 4% near its end.⁶⁵ On the other hand, imports from Cyprus reached a peak early in the Hyksos Period and another towards its end. This trade was bound to have gone hand in hand with the import of copper which ceased being produced on the Sinai at the end of the 12th Dynasty when all evidence of expedition activity petered out.⁶⁶

After the conquest of Avaris, the town shrank from what we know at present to 20–30 ha along the eastern bank of the Nile (Fig. 9d). Due to denudation by agricultural levelling, parts of this settlement were lost. Nor do we know the extent of squatter settlement in the ruins of Avaris. Even more difficult is it to assess the Ramesside settlement of the town. We have evidence of cemeteries near the abandoned citadel of Horemheb⁶⁷ but denudation makes it difficult to fathom the nature of this settlement. We do have, however, numerous pits and surface finds with Ramesside ceramic material, which indicates settlement activity.⁶⁸ Third Intermediate Period and Late Period activity can be found only on the highest parts of the Tell (areas A/I–II) by excavation.⁶⁹ It seems that most of the late settlement dates to the Persian Period (Ph. A/2).⁷⁰ The size of the settlement may have even equalled the Hyksos Period, given the extent of areas where pits with Late Period storage jars have been found.⁷¹ Houses and a temple which seem to belong to the Late Period have been discovered by a geophysical survey under Irene Forstner-Müller.⁷² Finds of Rhodian amphorae from the 3rd century BC and tombs show a continuation into Ptolemaic Period (Ph. A/1)⁷³ but of only very limited size and very regional importance.

IV. SETTLEMENT PATTERNS AND THEIR CHANGING DEVELOPMENT

The Egyptian settlement in the lower stratigraphy of Tell el-Dab^a shows planning according to a modular system.⁷⁴ The house sizes in the oldest part of settle-

ment (Ph. N/2–3) are small (27m² = 100c²) and attached to each other in rows of 12 units.⁷⁵ The limited size of housing and of the narrow streets which were only 5 cubits (c. 2.60 m) wide are signs of minimal provision of accommodation which comes close to an extreme of exploitation of Crown subjects with very low levels of quality of life (Fig. 10).⁷⁶ The inhabitants tried to improve the restrictions by enlarging their houses at the expense of the streets and by occupying and connecting neighbouring units, in case they were abandoned or left unoccupied. The congested conditions improved slightly at the settlement of ‘Ezbet Rushdi during the middle of the 12th Dynasty – also with a planned, but detached housing system and a 37 m² increase in the size of dwelling units (Fig. 11).⁷⁷ The houses still exhibit a uniform system of a vestibule/main room in front and a bipartite division of the rear, with resort to a very popular type of house style of the Middle Kingdom which can be found as parts of bigger apartments at El-Lahun.⁷⁸ The back rooms were of different size with a wider and narrower room.

With the arrival of the Canaanites at the end of the 12th and during the 13th Dynasties, the uniformity ends and a more irregular detached type of settlement started. The plots were wide and the houses larger (Fig. 12).⁷⁹ This could be taken as a sign of increased prosperity of the population in the early Second Intermediate Period. The earliest settlers used to live in houses of between 54 and 125 m². One finds Near Eastern types of house, such as the Broad Room House and the Middle Room House (Ph. H).⁸⁰ They also introduced burial within the settlement whilst, previously, a strict segregation of burial and settling ground can be observed.

In the strata of the advanced 13th Dynasty (Ph. G/1–3) the settlement shows, at two excavation sites, an egalitarian settlement pattern with modest houses and ample space around them (Figs. 13–14).⁸¹ A typical house is nearly square and has – positioned asym-

⁶⁵ I owe these statistical evaluations to Karin Kopetzky, s. KOPETZKY 2009, 175, fig. 52.

⁶⁶ GARDINER, PEET & ČERNÝ 1955, 235–236; SEYFRIED 1981, 1–4.

⁶⁷ BIETAK & FORSTNER-MÜLLER 2007, 54–58.

⁶⁸ HEIN & JÁNOSI 2004, 187–188.

⁶⁹ BIETAK 1968, 104–105, pl. 22a, c.

⁷⁰ David A. Aston, personal communication and study.

⁷¹ PhD dissertation by Manuela Lehmann, FU Berlin in preparation.

⁷² FORSTNER-MÜLLER *et al.* 2007, 100, fig. 4.

⁷³ BIETAK 1968, 105, tombs still unpublished.

⁷⁴ CZERNY 1999, 17–29.

⁷⁵ This shows that, besides the usual Egyptian decimal system, a duodecimal numerical system was also used at that time, which may be taken as a Near Eastern/Mesopotamian influence.

⁷⁶ BIETAK, in CZERNY 1999, 7.

⁷⁷ BIETAK & DORNER 1998, folding plan 1.

⁷⁸ BIETAK 1996b, 26–37, figs. 5,6, 12,13.

⁷⁹ BIETAK 1984, opp. 324, fig. 3.

⁸⁰ BIETAK 1984, 324–325, fig. 3; 1996, 10–12, fig. 8; EIGNER 1985, 19, fig. 1. For the terminology, see HEINRICH 1982, 7–9, 13–14; HEINRICH 1984, 7, 9, and 239, index “*Mittelsaalhaus*”.

⁸¹ BIETAK 1981, 238–241, fig. 2; 1991a, plan 2; 1996a, 31–36, fig. 27.

metrically to the north – an entrance leading into a bigger room and often with a hearth at its centre. It is 65–70 m² large. A door in the southern part of an inner division wall leads into the second narrower chamber. This type of house which we call *snail house* type is a variant of the tripartite El-Lahun type of house, but with the difference that the second side-chamber with bed niche and the vestibule are missing.⁸² It is particularly interesting that the houses of this phase feature the only courthouse which measures 108 m² – or 127.8 m² together with a vestibule (Fig. 14).⁸³ This house, which is much bigger than the others, may have belonged to a wealthier person and, in this case, indeed shows some social hierarchy. The rooms are arranged along three sides of a courtyard. The plan shows parallels from about the same time at Elephantine.⁸⁴ The discovery of the biggest ever found Tell el-Yahudiya jug⁸⁵ gives the building some kind of ritual connotation and it is possible that what we are encountering here is some kind of public or semi-public cult building which, however, does not seem to be a temple. Also broad rooms with asymmetric entrances make an appearance. They seem in most cases to be additions to pre-existing houses and may have been used as magazines.

Soon afterwards (Ph. F–E/3) – in the town centre at site F/I – a social differentiation seems to develop with houses of the tripartite El-Lahun type with a central room between two more narrow ones; one of them shows the typical niche of a bed chamber (Fig. 15).⁸⁶ In front of this unit there often tends to be a broad vestibule with an asymmetrically positioned entrance at the western end of the north wall. Sometimes the entrance is protected by an attached entrance hall anticipating the kind of entrance there is to Amarna House. This type of house is purely Egyptian, but the tomb chamber, sunken outside, next to the bed chamber and with an upper chamber accessible independently from the house, is a custom which seems to be modelled on the Near East.⁸⁷ In some of the houses one also finds tombs sunken in the floor of the middle room. Such houses also have magazines attached. In one case, another such house was constructed directly south of a similar, earlier building with a reduced room layout. The ordinary

houses in area F/I, which seems to be an upper class quarter, have during phase E/3 sizes between 68 m² and 280 m² (Fig. 15).

Besides this tripartite type of house one also finds small houses with only two chambers, one of them narrower than the other, some of them with a vestibule to the north.⁸⁸ The buildings with reduced room layout could be considered a slimmed-down version of the tripartite type. Other houses show a broad room with inner partition. Those smaller buildings are situated at some distance from the bigger ones at the edge of the plot of land. They measure between 50 and 82 m² – and even comprise an agglomerate of two houses. Some have several ovens in a row, which are missing in bigger houses. They could have been owned by the serfs of the residents of the bigger houses. It is interesting that there is even a spatial overlap with small upper-class houses, but the plans of the latter have the same room layout as the big houses, whereas lower-class buildings have simpler room divisions and their residents may have been more numerous. This overlap in house size was also observed among the ^cAmarna houses.⁸⁹

Over time, some of the bigger houses were enlarged or replaced by even bigger constructions (Fig. 16). Floors are paved and the room layout enlarged. Some houses expanded more than 300 m² and display such strong walls that an upper storey is conceivable, although no staircase has been found.

The plots were surrounded by walls which enclosed streets about 2.6 m till 3 m wide. The orientation was not so uniform, mainly NNE–SSW and E–W; in one corner the orientation changed, probably because of unknown topographical reasons, to NE–SW.

In the late Hyksos Period, there is a noticeable internal compression of the settlement (Fig. 17b). Courtyards were used up for houses and disappeared. Tombs were interred within the buildings. One had chambers which had been planned with the houses from the outset of construction.⁹⁰ In several cases, twin chambers were constructed. Some chambers yielded up to 14 burials and more. Houses in area A/II were built back-to-back, between 25 m² and up to 127 m². Some buildings measured only

⁸² RICKE 1932, 52–55, figs. 47–48; BIETAK 1996b, 31–37; figs. 5, 6, 12, 13; FREY & KNUDSTAD 2008, 53, fig. 34.

⁸³ BIETAK 1991a, plan 2, L–M/10–11; BIETAK 1986, fig. 27.

⁸⁴ VON PILGRIM 1996, 196–205, fig. 85.

⁸⁵ BIETAK 1981, 240, fig. 3, pl. VII; 1991a, 28–29, fig. 4.

⁸⁶ BIETAK 1996a, figs. 40, 42, 43, 45.

⁸⁷ BIETAK 1996a, 49–54, figs. 40, 42, 45.

⁸⁸ BIETAK 1996b, 25, fig. 4.

⁸⁹ TIETZE 1986, 77, fig. 5.

⁹⁰ BIETAK 1991a, 296–300, figs. 277–278, plan 8.

as little as 17.5 m², but they may have been attached to another building. The width of walls suggests that some houses seem to have had an upper storey. There was undoubtedly an increased diversification of the population but, as big and small houses can be found side-by-side, it seems that there was not one district for the rich and another for the poor, but that both parts of society lived side-by-side – which could be explained by a provider–client relationship leading to the formation of discrete groups within the settlement. This does not exclude slums in a specific part of town which have neither yet been found nor identified. What is interesting is the fact that, even in the last phase of the Hyksos Period, the density of settlement at the edge of the town diminishes and that, at the fringes in area A/V, a more detached form of settlement with courtyards and free-standing houses could be found (Fig. 18).⁹¹ This evidence would suggest that parts of the town – the suburbs – were not surrounded and contained by a wall.

The houses there vary between 50 m² to 100 m² and have a compact layout. The first room is broadly rectangular and takes up more than half of the space. The second part is normally divided into two rooms, either equally or with one small square and one long rectangular chamber. One compact house shows two nearly equal and nearly square chambers at the rear with asymmetrically designed doors and a staircase on the southern side. A wide-roomed house with asymmetrically positioned entrance is only 33.5 m². The houses take up approximately one quarter of the space (21:79) whilst, in the eastern town which is nearer to the centre, there seems very little court space left.⁹²

It is difficult to say at the moment whether the houses of the late Hyksos Period represent Egyptian or Middle Bronze Age houses from Syria/Palestine. The typical house has a main room with two small compact rooms of equal or different size at the rear. This room combination exists in Middle Bronze Age settlements in the Levant,⁹³ nor is dissimilar to the so-called “three-stripe” house plan which, however, has two nearly equal-size deep rectangular rooms at the rear.⁹⁴ A vestibule in front of the main room is option-

al. As such, the “three-stripe” house does not exist at Tell el-Dab^ca in the Hyksos Period. A house which was identifiable as a “three-stripe” building has been found thus far only in an excavation in the north-eastern suburb (near area A/V) of Tell el-Dab^ca by the Antiquities Organisation (the late Chief Inspector Ibrahim Mustafa). The question is whether this specific building does not date right back to the time of the 18th Dynasty when Upper Egyptian settlers were moving to Avaris. Such houses from that time can also be found at Tell el-^cAjjûl.⁹⁵

In assessing the standing and importance of the population of Tell el-Dab^ca in the course of time, we have matched the house sizes to the histogram of the well-differentiated and studied town of Tell el-^cAmarna (Fig. 19). The graph shows that houses between 12.5m² and 147m² fit organically within the range of sizes of ^cAmarna houses, whilst sizes between 208m²–320m² all originate from phases E/3 and E/2 – as the onset of the Hyksos Period and slightly before – and exhibit a size akin to the houses mentioned above. From phase G/4 onwards, there are two mansions which, when taken out of context and measured in isolation, would rank among the very biggest ^cAmarna villas. There seems to have been substantial differences in social rank, while the upper echelons of society seem in their importance to have matched those of Tell el-^cAmarna. They herald the advent of an entourage of a powerful king. It also seems that the houses of the upper class of the Hyksos Period have not been found thus far, except in one example at ^cEzbet Helmy, area H/VI.⁹⁶ One has to be careful not to overestimate the present evidence as at Tell el-Dab^ca not as many houses as at Tell el-^cAmarna have thus far been excavated or surveyed. Nevertheless the material to hand gives an astonishingly similar picture of the social hierarchy at both places.

V. PALACES

In our survey about the settlement and the density of the urban scheme, we have not considered very large buildings which dwarf even big houses. We may call them palaces. Among them we encountered, at Ph. G/4 at the beginning of the 13th Dynasty, a huge

⁹¹ HEIN & JÁNOSI 2004, 64, fig. 38; plans 1A, 1B.

⁹² Unfortunately it is difficult to measure precisely house against court space because of the heavy denudation of the uppermost stratum (phase D/2).

⁹³ For example: Megiddo Str. VIII, Locus 3100 (OREN 1992, 107, fig. 3).

⁹⁴ RICKE 1932, 13–19.

⁹⁵ YASSINE 1974, 130, fig.1.

⁹⁶ BIETAK & FORSTNER MÜLLER 2007, 37, fig. 2, H/VI.

complex of c. 2400 m² and which grew out of a mansion (Fig. 20a, b).⁹⁷ The core of the building has a similar plan to the large El-Lahun house with a wide, four-column central room and between two other narrow rooms. Instead of the usual square or elongated layout, this room was wider than it was long and could have been modelled on the Near-Eastern Broad-Room House still to be found in the previous phase. The middle room had four columns like the biggest El-Lahun houses. To its east was a bed chamber of such a size that it was even larger than the bed chamber of a Royal Palace.⁹⁸ The other side-room in the west grew out of a magazine which, at the earliest building phase, protruded from the front of the building and gave it an L-shaped plan. Behind the middle room is to be found a robing room most likely with a toilette. At a later phase, the western magazine was truncated along the façade of the building which was given a portico. Afterwards a rectangular courtyard, surrounded by colonnades, was added. North of this court a building was added. It consisted of two symmetric apartments, enclosing a straight long corridor which may be identified as a staircase to the roof. This enlarged building had an entrance porch to the north from which one could bypass the two apartments in the west and east along two corridors which reached the central courtyard. Also the two entrance corridors were a feature taken from the big El-Lahun House. Finally, the northern portico which led into a garden was closed, probably because of the cold air it let into the northern building, and thus a vestibule was created. This northern building had been added to the mansion in an asymmetric fashion in order to accommodate on its western side a domestic tract with a kitchen. It was there that a water supply system of burnt bricks encased in a waterproof loam layer passed under the floor (Fig. 26a). It gave water to a basin for domestic supply and continued to the middle of the courtyard where it most probably fed an artificial pond. When the northern porch was closed another opening into the colonnaded court was created towards the east with an attached entrance building which, at the same time, seems to have served as a tower. Altogether this mansion with its northern extension covered 2,435 m². As

such, it ranked as a palace. The original mansion, without the extension, measured 612 m² and was ranged at the upper end of the houses (*supra*). The planning of the structure was, wherever possible, conducted in straight cubit measures.

This building may have been owned by a high-ranking dignitary of the town at that time. He was without doubt of Near Eastern origin because the mansion seems to have replaced the Middle Room House of the late 12th Dynasty (s. above). Another such mansion of 893 m² (including the planned porch) with a long central hall, a robing room in the south and a big bed chamber with a bed niche was constructed directly east of the first one and seems to have belonged to the same family, but this project remained unfinished. In front of it were found remains of a garden with systematically arranged flowerbeds. Remains of other gardens were excavated south of the older mansion with regularly planted trees enclosing systematically arranged flowerbeds. This garden was watered by small irrigation canals which were still to be found along rows of tree pits. Most probably they had already been watered by a *shadûf*.

Later this garden was abandoned and a cemetery, most likely belonging to the inhabitants of the mansion, was laid out.⁹⁹ It shows a series of prestige tombs of Egyptian type arranged similarly as in the known iconic representations on labels, tombs or other representations in relief of the Butic sacred precinct in a row with trees in front of each funerary chapel.¹⁰⁰ The donkey burials in front of the tomb entrances and the prestigious weapons of the tombs, however, with daggers and knives of Middle Bronze Age typology suggest that Canaanites were buried there.¹⁰¹

A third large mansion – most probably from the same period – was found by geophysical survey northwest of the two mansions described above.¹⁰²

Positioned, not at the centre but at the edge of a lake basin (Basin 2), the geophysical survey revealed a palace in Area F/II (s. also the contribution of Irene Forstner-Müller in this volume). The building was partly excavated and dates back to the middle of the Hyksos Period (Fig. 21).¹⁰³ Six impressions of various seals of the Hyksos Khayan suggest a date during the reign of this king, which fits in well with the date

⁹⁷ BIETAK 1984, 325–332, figs. 4–5; EIGNER 1985; 1996; BIETAK 1996a, 21–30, fig. 18; see also ARNOLD 1989, 77–78, fig. 6.

⁹⁸ EIGNER 1996, fig. 3.

⁹⁹ SCHIESTL 2009.

¹⁰⁰ BIETAK 1994, fig. 11.

¹⁰¹ SCHIESTL 2009.

¹⁰² See contribution of FORSTNER-MÜLLER in this volume.

¹⁰³ BIETAK & FORSTNER-MÜLLER 2006; 2007; BIETAK, FORSTNER-MÜLLER & HERBICH 2007; BIETAK in print b.

by pottery and stratigraphy. It is perfectly possible that this was a palace belonging to this king. The building was oriented NE–SW with a road leading in a slight bend c. 130 m north-east of the remains of a temple of the same period which was situated at the centre of the town. According to the survey, it seems that an alley of trees flanked the road.

While, at the time, it was the temples which still retained Near Eastern features, it seems quite clear that this palace also could be identified as an example of Near Eastern architecture. The plan (Fig. 21) shows a compact layout and segmentation into juxtaposed quarters with several courtyards; the construction is additive, the staircase towers jutting out of the façade.¹⁰⁴ All of those features are typical of Near Eastern Palaces of the Bronze Age – compare for example, for the Middle Bronze Age Ebla Q¹⁰⁵ and Mari,¹⁰⁶ and during the Late Bronze Age Qatna,¹⁰⁷ Alalakh IV, Ugarit and perhaps at Ras Ibn Hani.¹⁰⁸ There is also the typical lack of a central axis. Its size¹⁰⁹ of about 10,500 m² ranges on the upper level among the palaces of the Middle and Late Bronze Ages, such as found at Qatna, Ebla Q and Ugarit in Syria (Fig. 22).¹¹⁰ The magazines in the south-west of our palace F/II with a square and a rectangular room in rows compare well with the magazine quarters of the palace of Qatna.¹¹¹ Egyptian Palaces, on the other hand, normally have a straight and normally axial room layout. One hall follows another, whilst private apartments can be found at the rear of the palace.

Of particular interest is a big courtyard in the south-western wing of the building of originally c. 27 × 21.3 m space (Fig. 23). It was enclosed west and north by double filling walls. Later its eastern edge was used for the construction of a storage building with three rooms filled with beakers, bowls and other vessels. The same types of vessel were found also in their thousands within large-size pits dug in this courtyard.¹¹² This courtyard seems to have been used for ritual banqueting on special occasions. Afterwards, the vessels used on such occasions were buried in the yard

together with the bones of the animals eaten. Many ritual vessels were found in those pits including terracotta earthenware for meat. Animal rhyta in the form of hippopotami, ducks, and a nude female figure suggest fertility rituals. Along the northern, eastern and southern walls and across the middle of the court we find benches made of mud brick, used either as seating or for placing dishes and drinks.

To the south of this palace in a later phase a deep subsoil water-well was dug in rectangular shape, measuring c. 12.5 m × 10 m at its upper edge (Fig. 24). It reached at least 4 m down and was accessible by a dromos with a stairway oriented northwards to the palace. We do not know if this was the only water supply, but if so, the water had to be carried in vessels upwards to the palace.

This palace seems to have been abandoned and another palace – perhaps on a larger scale – was constructed at some distance northwest of the former. It was situated at a previously under-used plot on the eastern bank of the Nile branch on the edges of Avaris. In order to create an elevated building ground earth and sands were dumped there and retaining walls constructed. Behind a buttressed enclosure wall we found an enormous garden in a stripe 100 cubits (52.5 m) wide (Fig. 25). Behind a second enclosure wall only peripheral buildings were discovered in addition to a huge water supply system made of limestone and encased in clay to make it waterproof (Fig. 26b). The expansive water-supply system 52.5 cm wide and 40 cm high suggests that it was meant for a large household such as a palace. This building has not been found but the water supply leads southwards and it seems likely that the palace was largely destroyed by the El-Didamun/El-Sama^cana-Canal. The other part seems to have disappeared under the Faqûs-to-Husseiniya Road.

This building plot with its gardens kept to tradition. In the early 18th Dynasty, after the conquest of Avaris, it was used for huge storage facilities such as silos and magazines and a smaller palace, which

¹⁰⁴ Ebla Q, Tilmen Hüyük, Ugarit (MARGUERON 1987, figs. 3, 5, 12).

¹⁰⁵ MARGUERON 1987, 134–135, fig. 3.

¹⁰⁶ HEINRICH 1984, 49–81; MARGUERON 1982, I, 370–380, II, figs. 147–149, 175, 234, 256; 2004, 459–500.

¹⁰⁷ NOVAK & PFÄLZNER 2002, 71–82. See the more complete, partly reconstructed plan in MORANDI BONACOSI 2007, 223, fig. 2.

¹⁰⁸ MARGUERON 1987, figs. 7–12.

¹⁰⁹ The palace is not yet completely excavated, but the size can be plotted from the geomagnetic survey (BIETAK & FORSTNER-MÜLLER, 2006, 65, fig. 2.).

¹¹⁰ MARGUERON 1987, 152–153: Ebla Q: 7,800 m², Alalakh VII: 2,400 m², Qatna MB: 9,900 m², Qatna LB: 12,000 m²; Alalakh IV: 1,925 m², Ras Ibn Hani South: 9,000 m², Ras Ibn Hani North: 1,600 m², Ugarit Palais Royal: 6,500 m², Ugarit North: 1,600 m², Ugarit South: 1,400 m².

¹¹¹ See n.107.

¹¹² ASTON 2009.

could be excavated only to a small part (Fig. 27). Over and above those facilities which may have been used for stockpiling food for military expeditions, we find army camps, cemeteries for soldiers and some graves for horses and mules.

In the Tuthmosid Period, i.e. most probably from the reign of Tuthmosis III onwards, a huge palatial quarter was constructed there – totalling 5.5 ha (13 acres) in size (Fig. 28). It consists of three palaces, the biggest (Palace G) measures c. 12,792 m², the second (Palace F) 3,300 m², and the third 1,207.5 m². Between the two bigger palaces was a large rectangular artificial lake.

The trend towards increase in palace sizes is very well exemplified by Tell el-Dab^a in connection with trends in the Near East. Palace G is equal in size to the Royal Palace of Qatna in the Late Bronze Age (Figs. 22, 29). Of course Tuthmosis III and his successor Amenophis II had much more importance than the King of Qatna, but the palace at Tell el-Dab^a was not the only residential establishment of those kings and, secondly, it was only one palace out of three within this huge precinct. As discussed above (p. XX) the palatial precinct at the time of Tuthmosis III and Amenophis II, situated not far from the northern coast of Egypt, are explicable as a royal residence at the major naval base which, at that time, was Peru-nefer.

All three palaces were erected on top of mud-brick platforms more than 7 m high and were accessible by ramps. The ground plan of the big palace can be reconstructed as follows (Fig. 29):¹¹³ Accessing the platform one found a square colonnaded courtyard which led via a porch with three rows of columns to a very wide vestibule with two rows of columns. After that, the palace splits into two halves: a huge hall with four rows of columns occupied the eastern (left) half. It can be identified as the throne room, but it is odd that the royal ceremonial hall was on the left and inferior side of the building. The explanation is that the array of rooms on the right corresponds to the plan of an early Tuthmosid temple with a tripartite-room scheme at the entrance and an indirect access to the shrine from the left one of the three rooms. Most conspicuous is a transverse hidden shrine at the end of the array. Behind those ceremonial rooms of the King and Divinities we find the private apartment.

Besides a likely connection from the throne room, it had access from a side-entrance from the eastern longitudinal side of the building. Each of the two entrances of the palace was fitted with bathrooms with stone basins.

The Palace F was equally accessible by a ramp on its northern side, most probably indirectly leading into a rectangular courtyard (Fig. 30). The reconstruction is based on the walls of the substructure and is partly subject to varying interpretation. Without doubt at the centre of the palace there lay a square courtyard surrounded on all four sides by colonnades or pillars. The rooms in the south could be reconstructed on the basis of the El-Lahun House and Amarna House as a throne room with four columns, flanked by a two columned side room in the east and a dressing room/washing room in the west. There was no place for a private apartment. That is why no special side entrance which would lead into the private apartments was found, as was at Palaces G and J. It is therefore a purely ceremonial palace. The palace, predominantly the state-rooms in all likelihood, were decorated with Minoan wall paintings (Fig. 31)¹¹⁴ showing emblematic griffins and friezes with bull leaping, hunting and animal friezes with lions, leopards and griffins chasing ungulates. Minoan stucco relief of bulls originate most probably from the central courtyard or the northern entrance porch.¹¹⁵ Also the big Palace G was at least partly furnished with Minoan painting and stucco relief.¹¹⁶ Later destruction and the use of those buildings as quarries in the late 18th Dynasty destroyed largely the volume of the painting remains.

Also the small Palace J, south of Palace G was constructed on a platform (Fig. 32). Its plan, in a strongly scaled-down way, resembles the big Palace G except that this small palace had no facilities, which could be identified as a shrine. Its throne room with two rows of columns was positioned along the central axis. Also Palace J had a side entrance leading most probably directly to the private quarters. Beside the side entrance one found in a niche at the long side of the building washing facilities.

East of the big Palace G was another public building (L) with a big assembly hall to its south, accessible from a big doorway to the east (Fig. 33).¹¹⁷ The

¹¹³ BIETAK, DORNER JÁNOSI 2001; BIETAK & FORSTNER-MÜLLER 2005; BIETAK & FORSTNER-MÜLLER 2007; see in particular BIETAK 2005, 145–151.

¹¹⁴ ASLANIDOU 2002; BIETAK, MARINATOS, PLYVOU 2007; MORGAN 2006; MARINATOS & MORGAN 2006.

¹¹⁵ Study by Constance von Rügen in preparation.

¹¹⁶ BIETAK, in BIETAK, MARINATOS & PLYVOU 2007, 42, fig. 40 and unpublished material.

¹¹⁷ BIETAK & FORSTNER-MÜLLER 2007, 43–48.

assembly hall was once paved and must have had columns to carry a roof but no foundations are preserved anymore due to a later change in its use as storage area and due to a huge pit excavated probably for brick manufacture sometimes later. We cannot exclude that it had been a courtyard but the pavement and a podium covered with stucco makes such an assumption unlikely. North of the hall we find a bathroom with stone basins and a stuccoed floor. At the walls traces of a painted ornamental pattern were found. Double walls in the south, east and west of this assembly hall seemed to have been filled in between. They bear similarity to the courtyard enclosure of the offering court of the Hyksos Palace of Khayan.

From the assembly hall a side entrance leads to the private entrance of the big palace G. It shows that either the resident of the Palace G – most likely the King or the Crown Prince – had access to the assembly hall or the dignitary presiding over this Building L had direct access to the private quarters of the palace. The assumption that the lord of the palace gave public hearings in building G is unlikely as he had his huge throne room described above within the palace. To the north, the room scheme suggests that residential quarters were accommodated in a first floor, which rested on a platform while in the ground floor one finds magazines.

In all likelihood, this palace precinct represents a replica of the palace at the main residence, which was situated at Memphis at that time. There the vizier had his office and residence within the Royal Palace compound as reconstructed from textual material by van den Boorn.¹¹⁸ In the case of our palace the building was most probably the office of Superintendent of Peru-nefer who was, at the time of Amenophis II, the foster-brother of the king, Qenamun.¹¹⁹ The building in question seems to date from the later phase of the palace (C/2), from the late reign of Tuthmosis III and Amenophis II. At that time the small Palace J south of Palace G was replaced by a big workshop (W₂) with magazines and offices.¹²⁰ Other workshops were attached to the enclosure wall from outside (W₁). Another workshop complex was added to the north of Palace F. All workshops were multifunctional producing furniture, projectiles for slingshots, metals- and other objects needed in the palace household.

We mentioned already above that the presence of palaces in royal dimensions could be explained in connection with the recently discovered and verified harbour basins as the royal residence at the major naval base of Peru-nefer (Fig. 3).¹²¹ The site was abandoned after Amenophis II and perhaps re-occupied during the Amarna Period by a fortress. A large extension of the fortress was constructed under Horemheb¹²² who also reconstructed the Seth temple, which seems to have been abandoned in the Amarna Period. It even seems possible that Horemheb with the fortification wall together encompassed the major harbour basin and the temple of Seth (Fig. 4).¹²³ Thus he would have re-created a tremendous military base combined with his residence. We cannot prove this notional idea because of agricultural levelling but it would be logical envisaging the advent of the grand Delta residence Pi-Ramesse of the Ramessides.

VI. TRADITION OF PLACE USE

It remains to assess if in the long occupation one could discover tradition in the use of a certain terrain of the site. Such conclusions can only be based on stratigraphic excavations, which are in comparison with the size of the settlement very limited. Nevertheless some important conclusions could be drawn. The site of the excavated palatial mansion from the beginning of the 13th Dynasty (area F/I) together with the attached cemetery seems to have been constructed at the same site as the big Middle Room House of the late 12th Dynasty, which also had an attached cemetery of upper class burials (Figs. 12, 20a, b). During the middle of the 13th Dynasty, possibly during a time of political transformation, when the palatial mansion was abandoned and a statue of one of its dignitaries smashed, the complete redistribution of plots suggests changes in land use and perhaps in the political development of the town. As discussed above, an egalitarian settlement pattern gave way to a diversification of building sizes and area F/I seems again to have become a quarter of upper class from Ph. F onwards, but not of the same calibre as during Ph. H–G/4 (Figs. 16, 20a, b).

The temple precinct in area A/II was constructed on an area of cemeteries at the edges of the town at the

¹¹⁸ VAN DEN BOORN 1988, 76, fig. 5.

¹¹⁹ Zu Qenamun s. *Urk.* IV, 1401–1404, 1407. HELCK 1956; HELCK 1984, 78–81; PUMPENMEIER 1998, 79–85.

¹²⁰ BIETAK, DORNER, JÁNOSI 2001, 89–96.

¹²¹ BIETAK 2009.

¹²² Date according to ceramic analysis by ASTON 2001.

¹²³ BIETAK & FORSTNER-MÜLLER in print, fig. 2, fig. 10.

time of the 14th Dynasty (Ph. F–E/2). It had something to do with funerary function and was surrounded by cemeteries and mortuary chapels in the time preceding the Hyksos Period (Fig. 34). While during the 15th Dynasty the occupation of the cemeteries gave way increasingly to the expanding settlement, the core of the sacred precinct remained intact throughout the Hyksos Period. It seems that afterwards the centre of the sacred precinct moved northwards to the site of the Temple of Seth which may have, however existed already during the Hyksos Period there.

Also in the palatial complex a local tradition can be observed at area F/II with the palace of the middle of the Hyksos Period, which belonged possibly to the Hyksos Khayan (Fig. 21). This complex seems to rest on a building complex of similar function. For a specific reason the palace was abandoned and a new complex of a bigger scale was constructed afterwards more towards to north-west on a large plot of land at the eastern bank of the easternmost Nile branch hardly used before (Fig. 25). A kind of horizontal development had taken place with palaces of the New Kingdom moving even more to the north-western direction but occupying still the former gardens of the late Hyksos residence (Figs. 26b, 29).

VII. POSITION OF TOMBS AND SACRED PRECINCTS

As long as Egyptians occupied the site during the 12th Dynasty there seems to have been a strict separation between settlement and burial grounds. No cemeteries have been yet found from this period and, within the settlement, only a few tombs turned up around there. They were most probably interred during a time after the houses had been abandoned. All this changed when the community of a population from the Near East arrived and started settling at the site. At the outset, tombs were arranged in small cemeteries south of the houses such as the small cemetery south of the Middle Room House in area F/I during Ph. H (Fig. 13).¹²⁴ The space of those tombs was enclosed with hurdle-

walls of mud brick. Another cemetery was also found in area F/I at the southern edges of the settlement of this period. This juxtaposition was kept up in the following phase G/4 with the palatial mansion which again was added a closed cemetery at its south, which was most probably enclosed by a wall (Fig. 20a).¹²⁵ A comparison should be drawn with the cemetery of Mayors of Bubastis, just east of the palace at Tell Basta.¹²⁶ It dates from the time of the late 12th and the 13th Dynasties. There is also another cemetery from the Old Kingdom and which was most probably situated beside an Old Kingdom palace, just beneath the Middle Kingdom one.¹²⁷ It is conceivable that such special cemeteries for elite officials beside their former residence and office could have been a tradition in the Nile Delta.

At Ph. G and F, the tombs are accommodated either in the courtyard or within the house.¹²⁸ A speciality is the tomb chamber within a special room or enclosure attached west of the house, mostly next to the bed chamber (Fig. 16).¹²⁹ In the south-eastern suburb (area A/II) we find again cemeteries arranged around a big temple (Fig. 34).¹³⁰ They seem to represent families or clans. Tombs attached to temples is a custom which may have been a tradition in the Delta as such tombs have also been found attached to the temple at Tell Ibrahim Awad from the early Middle Kingdom, dating from the late 11th Dynasty.¹³¹ Also the tombs of the Late Predynastic period and the First Dynasty seem to be situated directly beside a contemporary shrine.¹³² One wonders whether such a Delta tradition had not been factored into the scheme of laying out cemeteries next to temples. In the next phases those cemeteries were given up and until the end of the Hyksos Period the dead were buried in domestic precincts, either in courtyards or in specially arranged spacious tomb chambers for multiple burials, which contained sometimes more than ten burials (Fig. 18).¹³³ In some houses tomb chambers were planned as early as the construction of the house.¹³⁴

¹²⁴ BIETAK 1984, 324–325, fig. 3; SCHIESTL 2009, 29–34.

¹²⁵ BIETAK 1991b, 58–72, Fig. 2; BIETAK & DORNER 1994, fig. 2; SCHIESTL 2009, 24–34.

¹²⁶ FARID 1964, 90; EL-SAWI 1979, 13f., 29, 76f.; BAKR 1982, 153–167; VAN SICLEN 1991, 188, fig. 1; 1996, 239, fig. 1.

¹²⁷ BAKR 1982, 153–167.

¹²⁸ VAN DEN BRINK 1982, 61–62; KOPETZKY 1993, 4–5, 12; FORSTNER-MÜLLER 2008, 84–89.

¹²⁹ KOPETZKY 1993, 13.

¹³⁰ BIETAK 1991a, 19–24; FORSTNER-MÜLLER 2008, 19–20, 86, 89, 93, 120.

¹³¹ VAN DEN BRINK, 1992, 45–48; EIGNER 1992, 69–75; VAN HAARLEM 2003, 536–539.

¹³² VAN DEN BRINK, 1988, 76–81; EIGNER 2000, 29, 32, fig. 8a, 33, fig. 9c (the last publication gives the position of tombs in connections to temples).

¹³³ BIETAK 1991a, 290–313; HEIN & JÁNOSI 2004, plan 1A, o/18-Grab 1, plan 1B, p/16-Grab 20; FORSTNER-MÜLLER 2008, 31f., 84–89.

¹³⁴ BIETAK 1991a, 290–297.

The custom of burying the dead at or in houses is a Near Eastern one and was introduced by immigrants who came to Tell el-Dab^ca in accordance with the customs of their land of origin.¹³⁵ The major idea of the domestic burial sites had undoubtedly been to provide the dead with food and drink as well as continuing spiritual contact with ancestors on a daily basis.¹³⁶ From an urban point of view, one wonders how one avoided the odours of the recently buried, especially in the late Hyksos Period when tomb chambers were frequently not covered up completely by soil. The avoidance of big communal cemeteries made burial and funerary cult a family or maximal a clan matter and did not stimulate the congregation of big parts of the settlement as is the case with modern rural communities which used to reach the size of big towns in antiquity.

VIII. IS TELL EL-DAB^cA A MODEL FOR THE STUDY OF EGYPTIAN URBAN DEVELOPMENT?

This question is difficult to answer as we have not enough samples of Egyptian settlement to know what is typical for Egypt. One should not forget that, from the late 12th Dynasty to the end of the Hyksos Period, the town was occupied by a Near Eastern population which to some extent acculturated but, on the other hand, kept its distinctive cultural identity in their burial customs, in the construction of their temples and at the outset of their settlement also in the introduction of their own types of house. However, over its long history of occupation, one can find developments and settlement patterns which seem to be comparable to the trend in Egypt. Typical for Egypt is, for example, the planned settlement where uniform houses were set up in specific modules, either as attached and backing houses in rows, such as the oldest phase of settlement (Fig. 10) or the detached houses in the settlement of the 12th Dynasty at ^cEzbet Rushdi (Fig. 11). Such kinds of settlements seems to include a royal amenity, such as the temple for the cult of Amenemhat I, constructed by Sesostris III at ^cEzbet Rushdi and a Djadjau – a royal hall of this king as a kind of official building, the door to which was found in a secondary position at ^cEzbet

Helmy, most probably originating from the planned settlement of the same time in Area F/I. A temple with a royal cult was also anticipated in this settlement.

Other planned settlements, such as the fortresses in Nubia, have a temple almost as a rule. In the case of the settlement of El-Lahun next to the Pyramid temple of Sesostris II, a temple has been recently identified within the settlement.¹³⁷

Planned settlements were founded by the state = the Crown and are encountered at Tell el-Dab^ca F/I and at ^cEzbet Rushdi as signs of colonisation of the eastern Delta during the 12th Dynasty. As mentioned before, it was only the 12th Dynasty which seems to have colonised the eastern bank of the easternmost Nile branch although, according to the teachings of Merikare, it may have already been the Heracleopolitans who started this process.¹³⁸ Yet, thus far, no traces of settlements from this age have been discovered. One small detail seems interesting. The blocks of houses contain 12 apartments in a row, although the Egyptian mathematical system was based on a decadal one. The question is whether we are able to spot, in that array of houses, some sort of influence from the Mesopotamian duodecimal system in Egypt which could have been of ancient origin and probably long been slumbering in the designs for modelling the Pharaonic architectural offices. Such an influence could not be expected from the nomadic population which had moved during the Early Bronze IV Period from the Sinai along the eastern fringes of the Delta.

Some time after the settlement of the Near Eastern population at Tell el-Dab^ca the houses used were perfectly Egyptian. This population introduced an organic way of settlement in which little to no planning can be observed. Such systems also existed of course in Egypt¹³⁹ where one could notice the tendency that even after some planning the settlement would by and by develop to irregular schemes.¹⁴⁰ The internal compression of settlement discussed above and in which, gradually, space of courtyards was used for new buildings finds parallels at Tell el-^cAmarna¹⁴¹ as do the agglomeration of houses of serfs around the houses of their overlords what can be observed in phases F–E/2 (Fig. 35).¹⁴²

¹³⁵ STIEBING 1971, 113–114; VAN DEN BRINK 1982, 61–62, 72–74.

¹³⁶ FORSTNER-MÜLLER 2008, 113–117.

¹³⁷ FREY & KNUDSTAD 2008, 58–63.

¹³⁸ QUACK 1992, 52–53; ROWIŃSKA and WINNICKI 1992, 134, 140–143.

¹³⁹ For example: HÖLSCHER 1934, phase II, south-eastern quarter; VON PILGRIM 1996, 223–230; 256, fig. 109; WENKE & BREWER 1996, fig. 5; ZIERMANN 2003, figs. 18–22, 36–41, 48, 50.

¹⁴⁰ See e.g. ^cAmarna (KEMP & GARFI 1993, sheet 3/T36; sheet 6/Q46, P46–47, sheet 7/N49); Tell el-Hisn (WENKE & BREWER 1996, fig.3).

¹⁴¹ FRANKFORT 1929, 145, pl. XXII; KEMP 1977b, 135, fig. 6; KEMP & GARFI 1993, sheets 6–7.

¹⁴² *Ibid.*

While we know in Tell el-Dab^a where the palaces were situated in the Middle and Late Hyksos Period and in the Tuthmosid Period, we have no clear picture of the relationship of the palaces to the major temple of the town. The palace attributed to Khayan seems, according to the geophysical survey, to be connected to a processional road to a temple to the north, only scanty remains of which have been excavated.¹⁴³ The concept of a government district, so dis-

tinctly familiar from Tell el-^cAmarna, cannot yet be substantiated at Tell el-Dab^a. From the Tuthmosid Period we have the palatial precinct with a large-scale official building which seems to have been linked to administration. But where the major temple and the houses of the upper class could be found is still not yet clear. Geophysical survey showed a whole settlement to the south of the palace, which could be such an upper class district, but its date is still uncertain.¹⁴⁴

¹⁴³ MÜLLER 1998, 794, fig. 1; 2001, 181, fig. 5; BIETAK in print b.

¹⁴⁴ BIETAK & FORSTNER-MÜLLER 2007, 38–39; only in a small area a stratigraphy of this settlement has been examined. While it seems that it dates to the late Second Intermediate

Period, pottery and scarabs on the surface make it likely that this settlement continued into the New Kingdom. It was, however, destroyed by agricultural levelling.



Fig. 2a The site of Memphis after the *Description de l'Égypte*

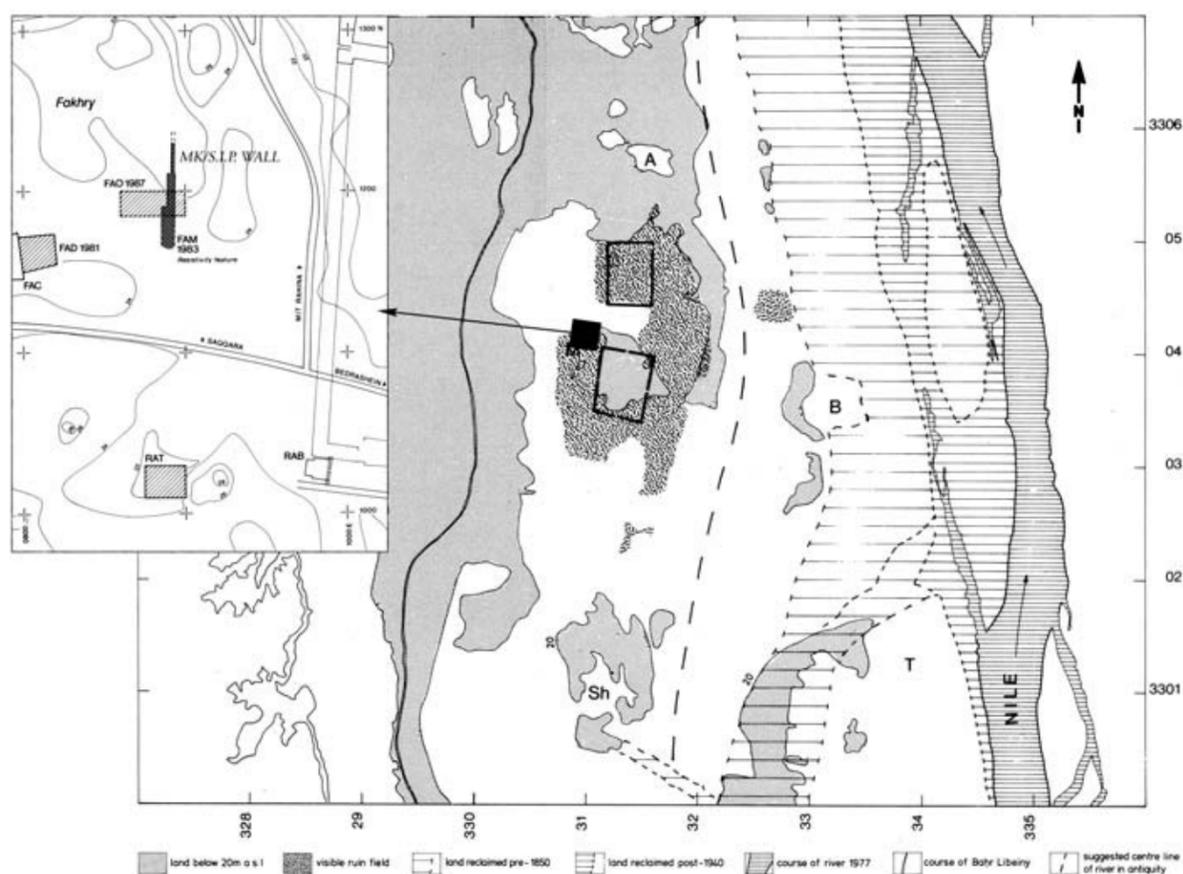


Fig. 2b The site of Memphis after D. JEFFREYS 1985, fig. 1 and D. JEFFREYS 1988, fig. 1

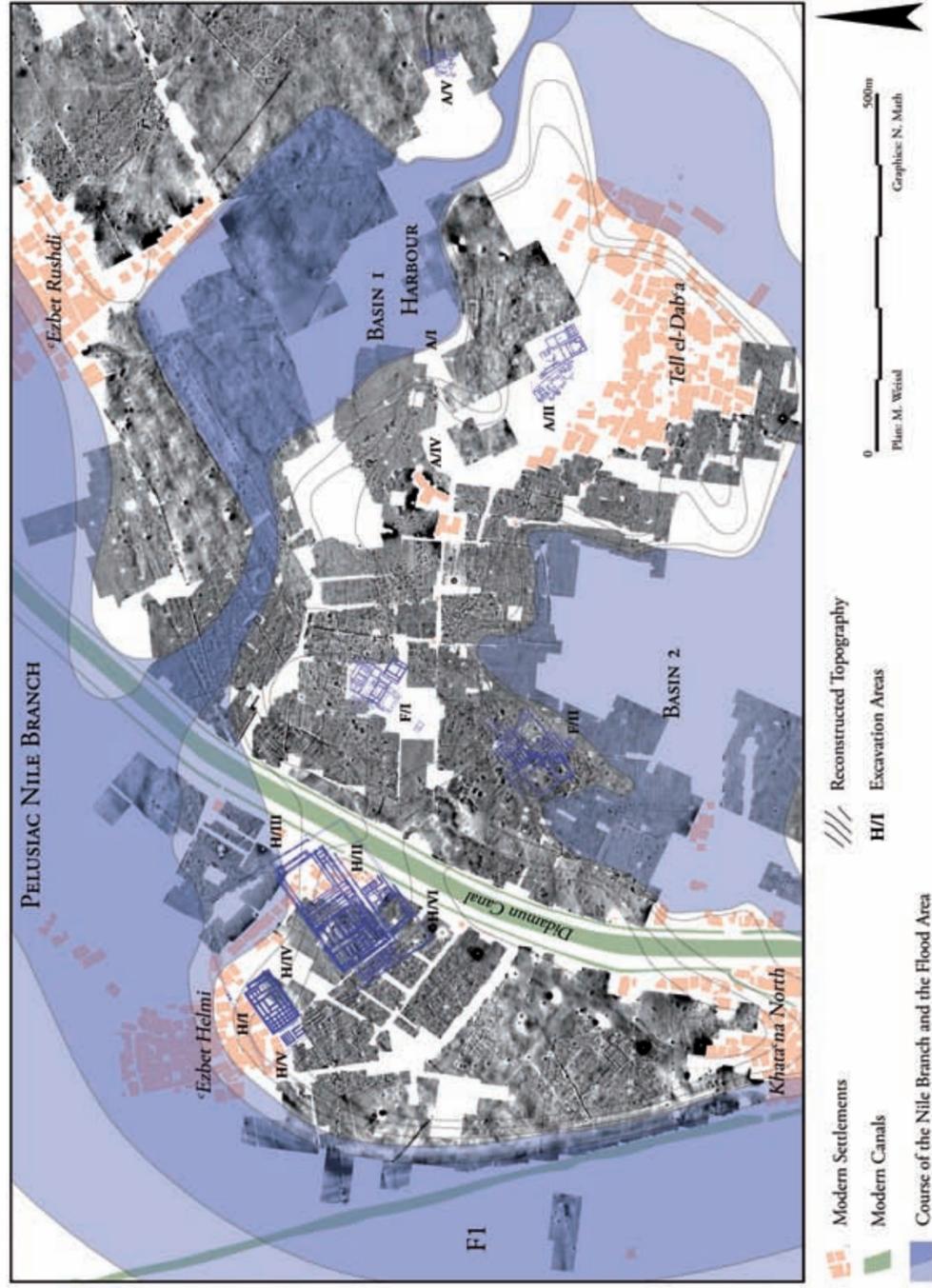


Fig. 3 Harbour (Basin 1) at Tell el-Dab'a, revealed by geophysical surveying

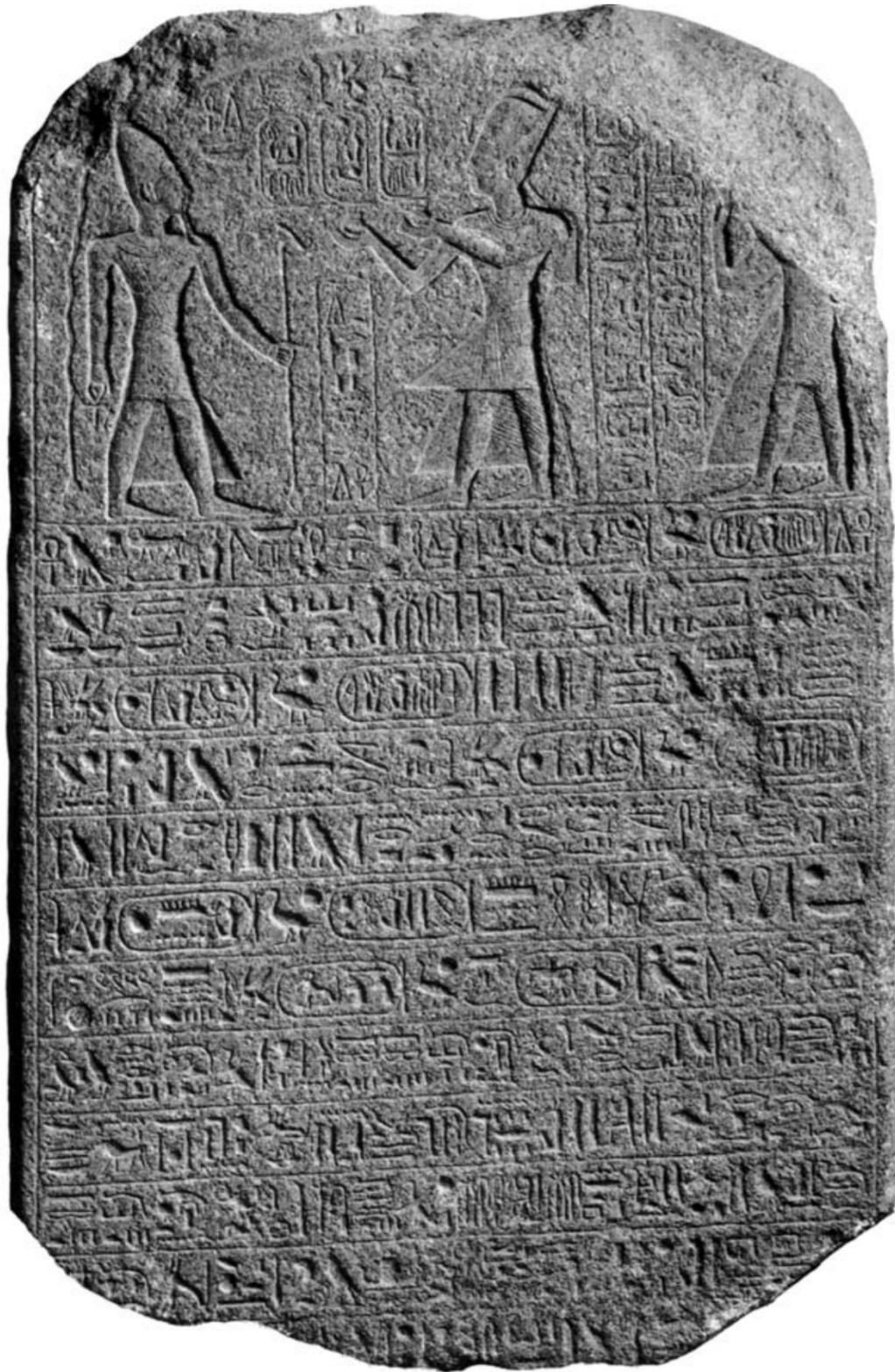


Fig. 5 The stele of 400 years' (after BIETAK, *E&L* 1, frontispiece, photograph Dieter Johannes DAI)

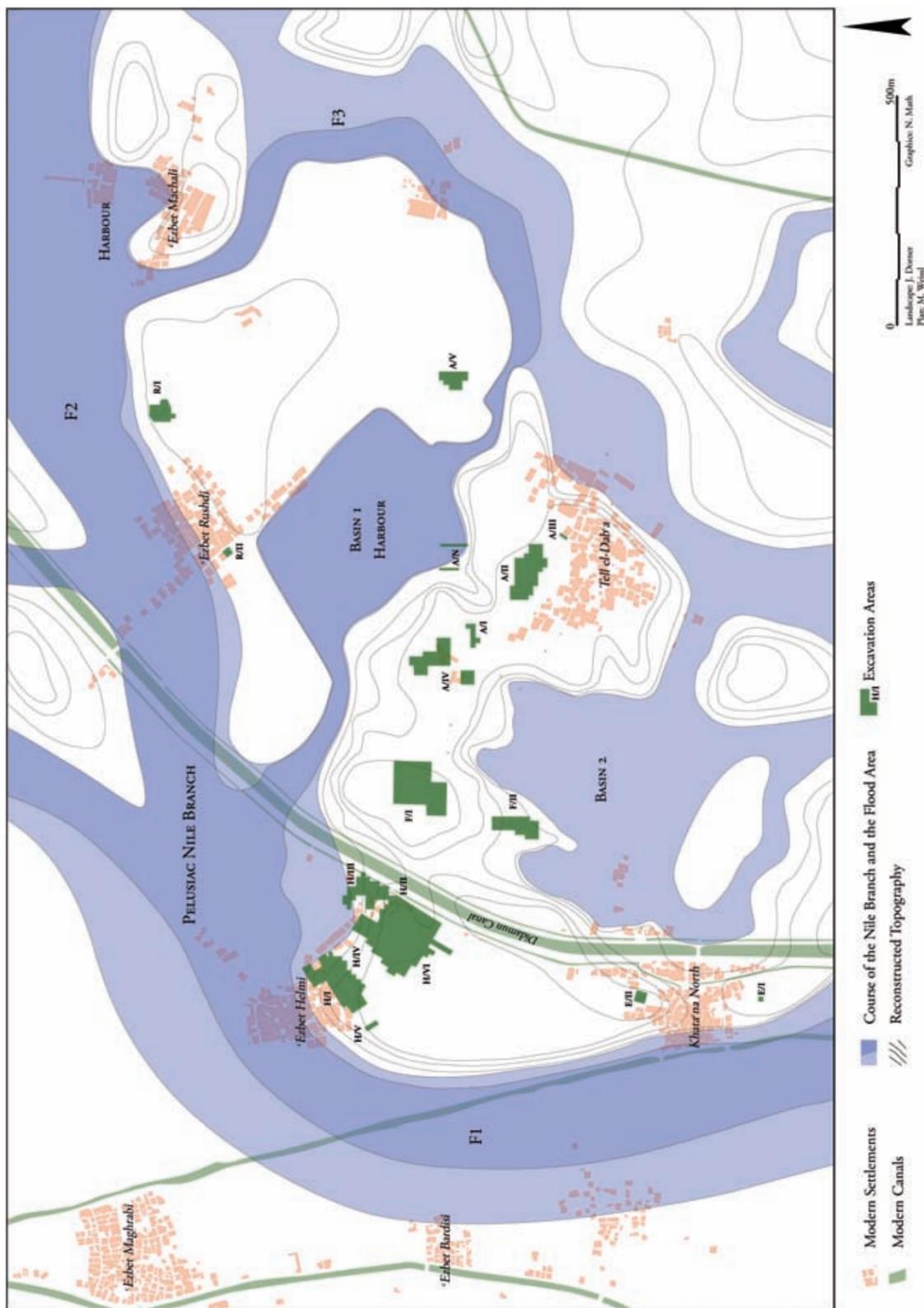
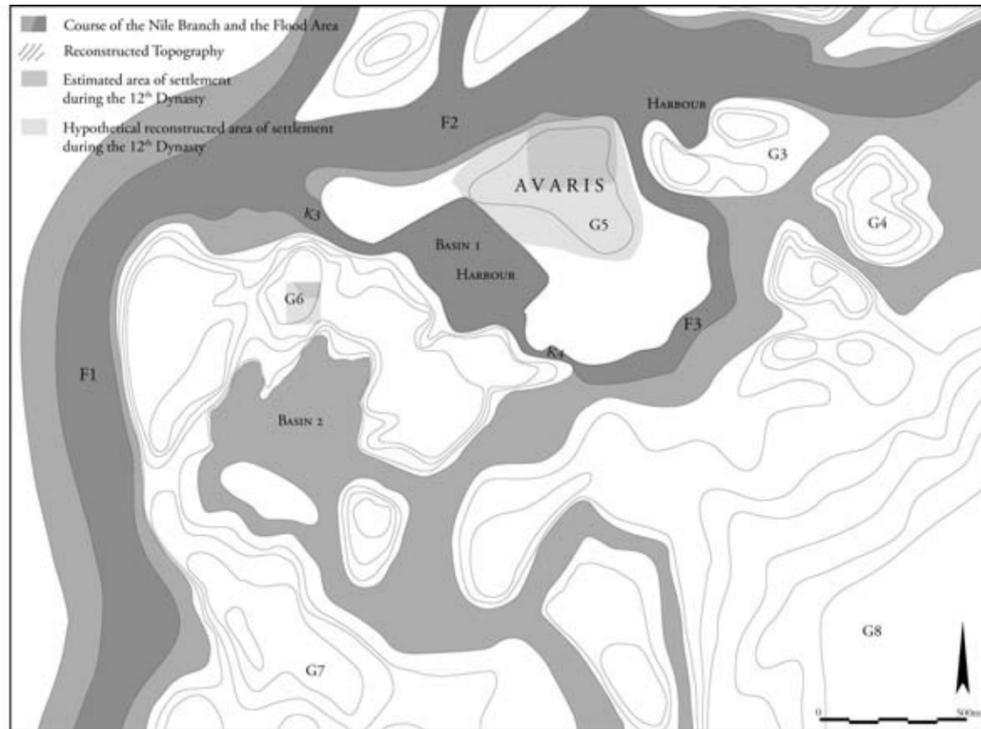
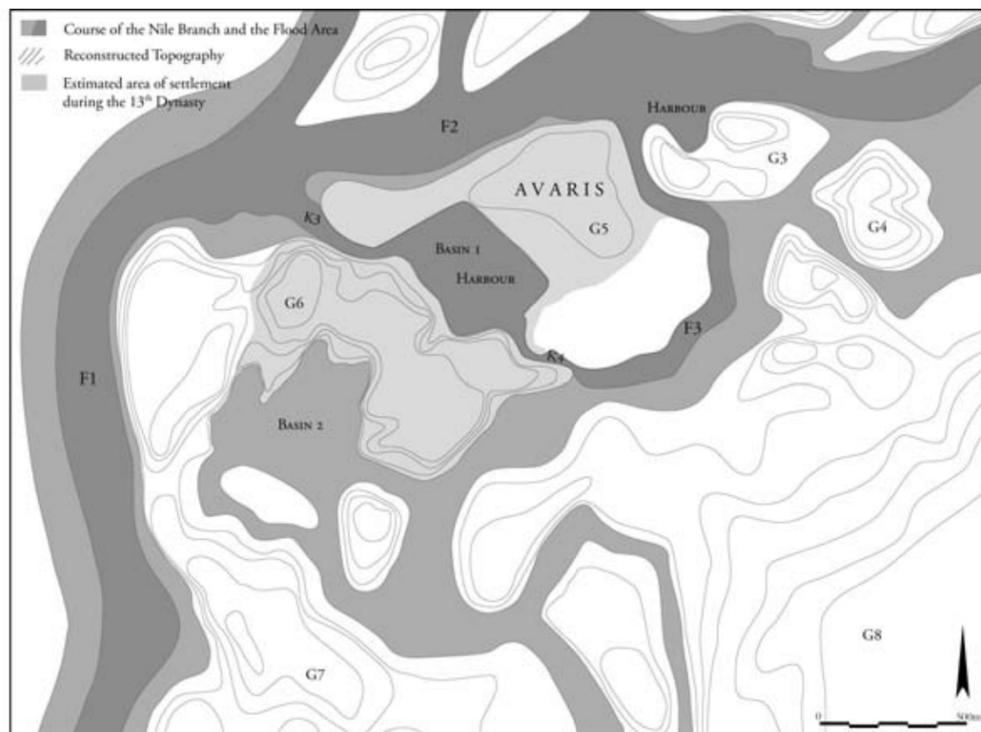


Fig. 6 Excavation areas in Tell el-Dab'a (reconstructed primeval land with overview of the excavation areas: A/1-V, E, F/1-II, H/1-VI, R/1-II)

Fig. 9a Settlement during the 12th DynastyFig. 9b Settlement during the 13th Dynasty

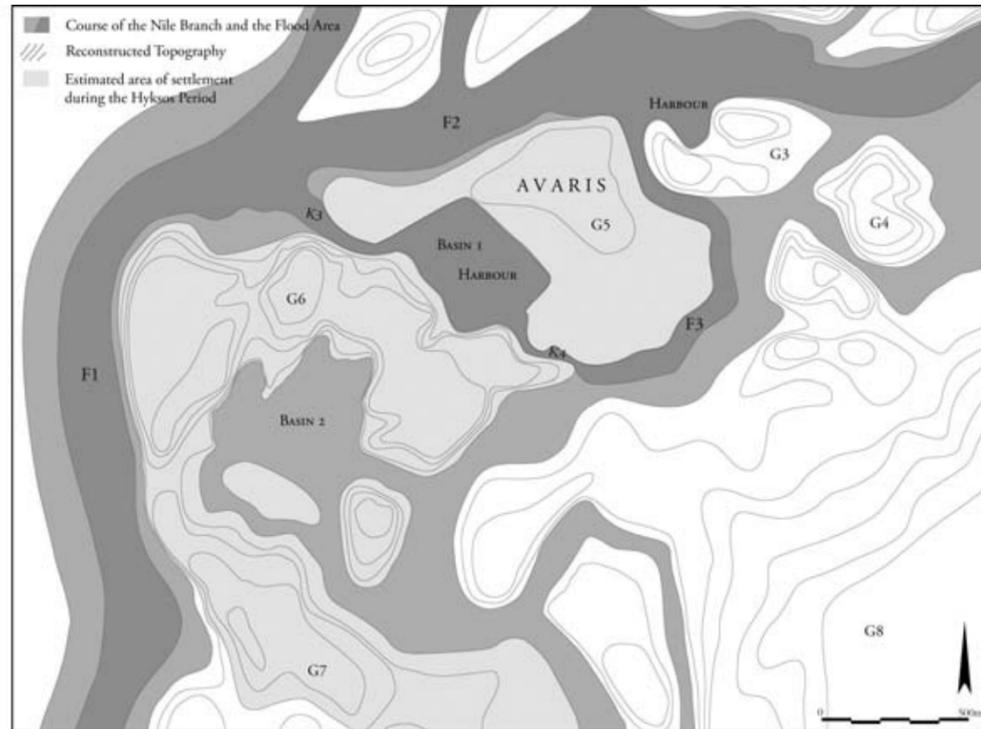


Fig. 9c Town during the Hyksos Period

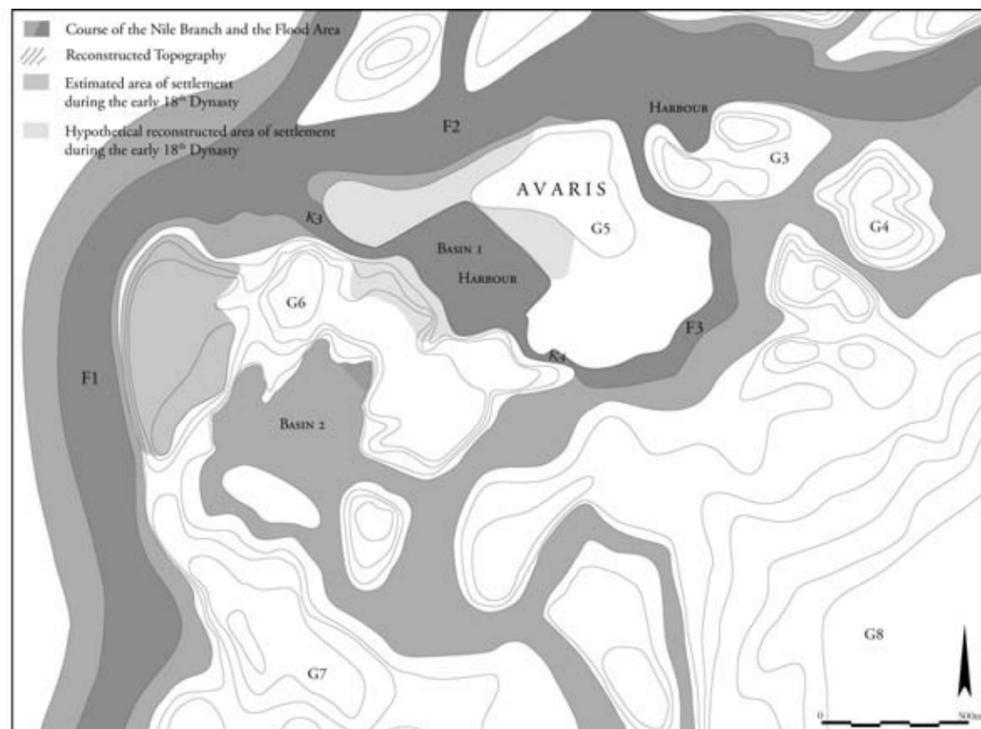


Fig. 9d Town during the early 18th Dynasty

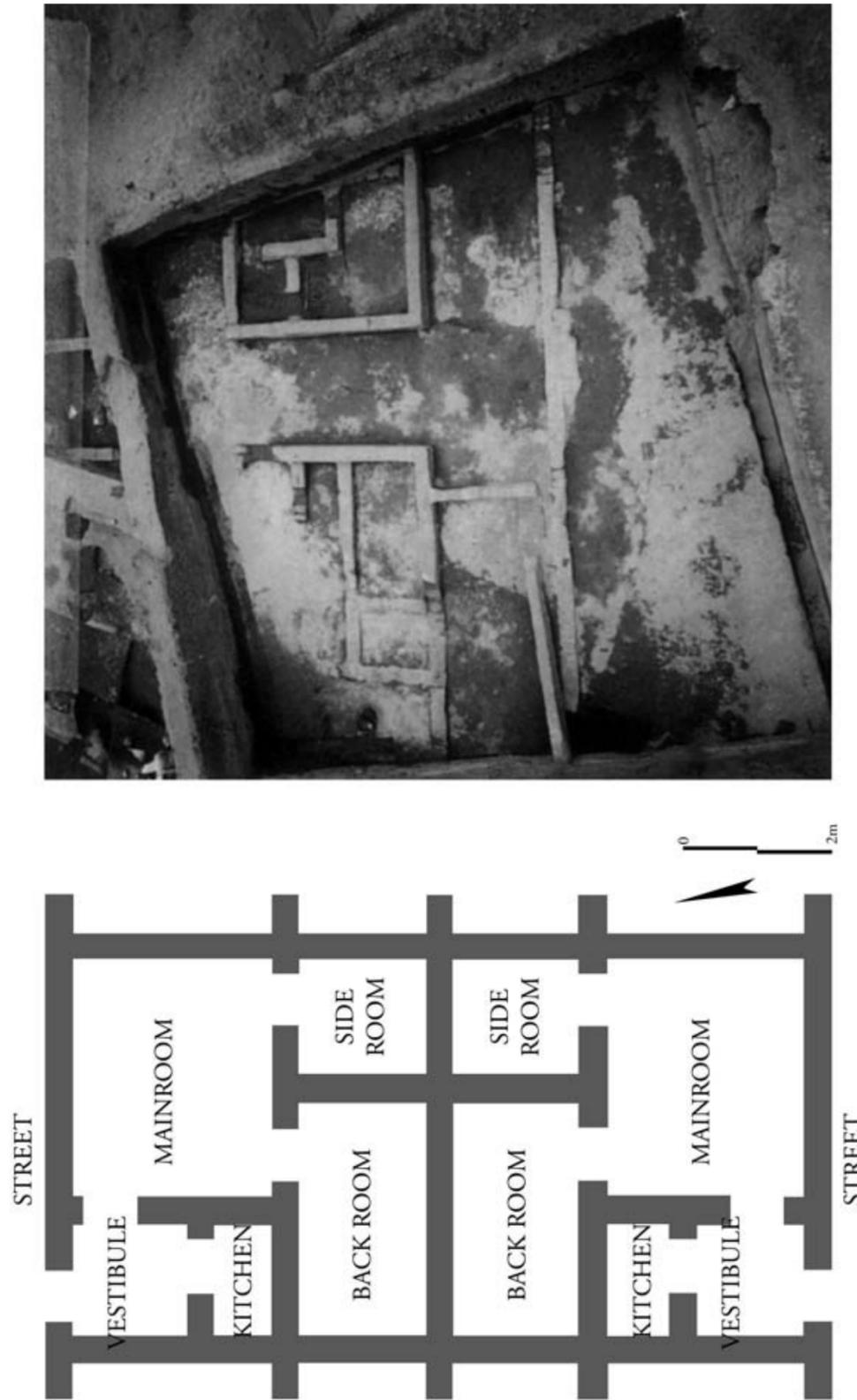


Fig. 10 Houses of the planned settlement with 27m² each



Fig. 11 The settlement of the 12th Dynasty 'Ezbt Rushdi



Fig. 12 Spacious compounds with Near Eastern types of houses in Ph. H



Fig. 13 Egalitarian settlement pattern in Ph. G/1-3 in area F/I



Fig. 14 Settlement pattern during Ph. G/1-3 in area A/II with court house