The city of el-Amarna as a source for the study of urban society in ancient Egypt[1]

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Sometime around 1350 B.C. King Akhenaten of the Eighteenth Dynasty of Egypt set out to create a new capital city on a fresh site on the east bank of the Nile, about 275 km. (170 miles) north-west of Thebes. Together with a substantial tract of agricultural land on the opposite bank, it was named 'The horizon of the sun-disk' (Akhetaten) (fig. 1). The conventional view is that this was a political move, to escape the influence of the cult of the Theban god Amen and his priesthood. But city creation has been a recurrent phenomenon of civilization, and one should be beware of too trite an explanation in this case, particularly since Akhenaten's father, Amenhetep III, had himself started a grand urban scheme on the west bank at Thebes, at Malkata (Kemp and O'Connor 1974). The first group of Akhenaten's boundary stelae, setting the eastern limits of Akhetaten, are dated to his fourth regnal year. Following his death in his seventeenth, the great scheme for the self-contained community was allowed to lapse, and the city itself was abandoned, except for an area around the modern village of Hagg Qandil. It had been built in a place where the desert probably came right down to the river's edge, and although the development in more recent periods of a cultivated strip of alluvium has made heavy inroads into the city's river frontage, a substantial part remains on the desert and thus relatively accessible. Between 1891 and 1936 large parts were excavated by German and by British expeditions, but still a sizable portion of the residential areas, mostly in the south, remains unexplored.

Settlement excavation in a civilization as well documented in its general history and material culture as ancient Egypt can be approached from two points of view. The choice of the long occupied, multi-period stratified site, which involves the repeated excavation of the same area to reveal ever deeper strata, has the consequence, particularly obvious where resources are limited, of placing the emphasis on the time dimension: on the development of what has to be presumed to be a reasonably representative sample of

[1] A shorter version of this paper was read in Cairo, in October 1976, at the First International Congress of Egyptology. It grew from a paper prepared for the 'Man, settlement and urbanism' conference held in London in December 1970 (Kemp 1972), but its basic approach also owes a lot to discussions with Dr Roland Fletcher, now of the University of Sydney, and to reading his Ph.D. thesis, 'Space in settlements', presented to the University of Cambridge in 1975. Dr Graham Plows kindly helped me over the conceptual hurdle of the normal probability distribution.

    For the historical background to el-Amarna, a good, convenient account is Aldred 1968; and for the architecture, Stevenson Smith 1958; Badawy 1968; and Fairman 1949.
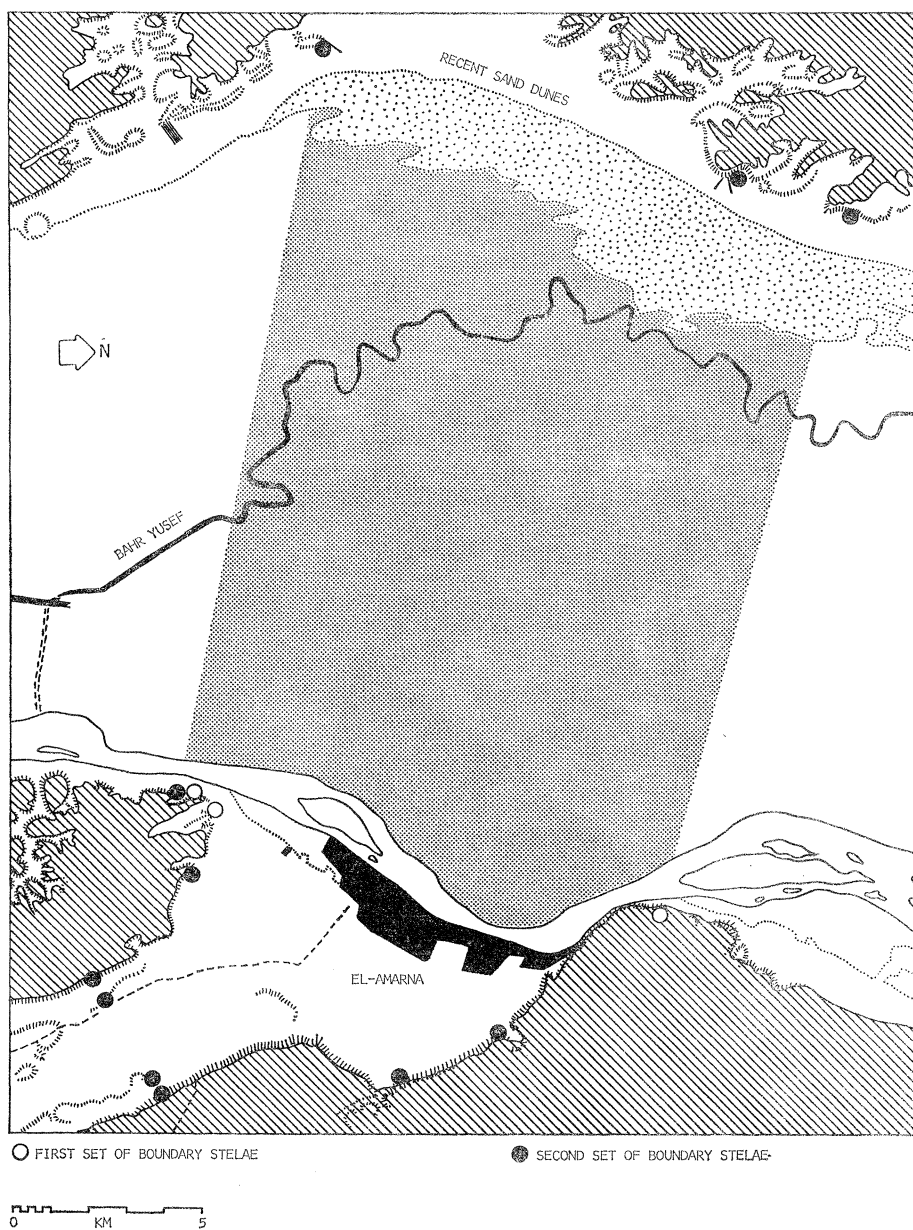
O FIRST SET OF BOUNDARY STELAE   ● SECOND SET OF BOUNDARY STELAE·

0   KM   5

Figure 1 Map of the limits of Akhetaten, as defined by the boundary stelae. The shaded area on the west bank is the modern extent of agricultural land so defined. Anciently it may not have extended so far to the west

the settlement at its different stages. But this involves an understanding of the stages from which and to which change and development take place, and there is still considerable ignorance about the basic shapes of settlements in Egypt for any given period. This is where the single period site has much to offer. The emphasis is necessarily on the study of wide areas, and with a much greater chance of recovering a representative picture.

Furthermore, one of the great problems of archaeology is automatically absent: the problem of how much of one level was simultaneously under occupation at any one time. One can take for granted a circumstance which, on a multi-period occupation site, requires a considerable amount of careful archaeological work and time-consuming analysis. Single period sites, if their background is correctly understood, are paradigms of rare value against which more dynamic but usually more fragmentary records of settlement history can be set.

In the case of el-Amarna, however, there is a fairly widespread view that it possessed, particularly in its residential areas, a unique character created by an unusual degree of spaciousness allowed by the ready availability of building land (e.g. Badawy 1968: 15, 55; Fairman 1949: 41–2). Hence it is not a place from which generalizations about Egyptian urbanism in the New Kingdom can be safely made. The city layout tells one about itself but about little else, and is interesting only as a contrast to the 'normal' shape of towns which, remarkably enough, remains as much a matter of imagination as of recovered evidence.

Badawy (1968: 15, 55, colour plate IV; following Davies 1929, and Fairman 1949), in particular, has emphasized the contrast, offering a reconstruction of Thebes as a city of many-storeyed houses densely packed with little in the way of attached open areas. This reconstruction is evidently influenced by the appearance of present-day towns and villages in Egypt, but also draws on representations of seemingly multi-storeyed houses in Theban tombs (Davies 1929; Badawy 1968: 15–26, which can be supplemented by the limestone model, Desroches 1938, if this is correctly dated to the New Kingdom). There must be, however, some element of doubt about the correctness of the interpretations of the artistic conventions, especially when comparison is made with the representations of buildings in the el-Amarna tombs (cf. Kemp 1976) which could be used to demonstrate that in two of the Theban examples, at least: Sennufer (tomb no. 96), and the harim of King Ay in the tomb of Neferhetep (tomb no. 49), there is nothing to demand more than one main storey. In some others it would be hard to exclude the possibility that an upper row of windows is not simply the clerestory of a raised central living-room, or the windows of an upper loggia which has been recognized as probably present in many of the larger houses at el-Amarna itself. One Theban tomb, that of Anena (no. 81, see Davies 1963: plate XXIII; Badawy 1968: 20–1), does actually depict a house with two rows of windows standing within what looks very much like an el-Amarna-type open estate. Badawy's classification of this as a country house seems quite arbitrary and to some extent contrary to the basis of his arguments since this house, too, is depicted with the upper storey of most of the so-called town houses. Indeed, of the examples which can be cited in this context, most are accompanied by representations of trees, and suggest at the least a more generous allocation of open space in the city area from which these representations are derived. The evidence for houses of more than two storeys in the end reduces itself to the scene in the tomb of Djehuty-nefer (tomb no. 104), and perhaps the limestone model, and there is little to be gained by trying to argue that this type of house did not exist at all. But it cannot be said that the representational evidence obliges one to consider that this was typical, although, in the end, only excavation can provide the answer.

But at a much more general level there are grounds for arguing that el-Amarna should

not be dismissed too readily as a source for certain aspects of New Kingdom urban society. In the first place, there is probably just enough evidence to support the argument that the New Kingdom saw an important development in urban history in Egypt, namely, the abandonment at many places of the old tightly packed towns, originally walled and now grown up into mounds, in favour of new sites on level ground, probably on the adjacent alluvial flood plain (Kemp 1977). From what little can be judged from the visible remains at Memphis, here the old city mound (Kom el-Fakhry) continued to be occupied, but the city, with temples and palaces, at the same time spread down on to the flood plain in a major phase of city expansion (cf. Kemp 1977). In view of the likelihood that agricultural land in New Kingdom Egypt was relatively cheap (Baer 1962), such expansion may not have been difficult to accomplish once the trend had begun. One must thus bear in mind the possibility that el-Amarna, far from being unusual or even unique in its expansiveness, exemplifies the changed form of urbanism in the New Kingdom.

A second point concerns one striking feature of the residential parts of the city: the absence of an imposed housing layout. A royal decision had been made to create a new city, exemplifying a new creed. There was already a long tradition of geometric town layouts created by government order. Yet on this occasion no one sought the satisfaction of creating the complete city in detail, of translating a grandiose, even megalomaniac vision into bricks and mortar, and so of regulating the life of a whole city community. Whether this was seen to be beyond the means of the Egyptian state at the time, whether the process of transferring to the new city involved too much haphazard or piecemeal decision making, or whether the shape of the city was simply dictated by preference, we may never know. But in the absence of planned accommodation, and in the face of what look like highly personal arrangements for individual household economies, implying an element of choice or more likely a transfer to the new site of existing arrangements, it may be accepted that no radically different social or economic way of life was being introduced, for these things just do not exist independently of architecture. And whether or not some of the richer people were moving from city houses of several storeys, the fact remains that from poor to rich houses the architectural style remains remarkably homogeneous, with basically only an expansion of a single approach to providing living-space. This is not to argue that el-Amarna was necessarily just a copy of Thebes or Memphis or some of the other major towns. Each may well have had its own character, even an internal variety. Indeed, there is no way of knowing if the houses close to the waterfront at el-Amarna and now lost beneath the modern fields were the same as those on the desert behind. The point of the argument is that something learnt at el-Amarna has a wider relevance for the study of New Kingdom urban society in Egypt.

There is an important contrast in our interpretational position between a site which has been architecturally planned in detail, and one that has not. When faced with a planned housing scheme the best that one can hope for is an interpretation of what the ancient architect thought was the best form of domestic layout. Any interpretation is, at best, once removed from what would naturally be chosen by the occupants themselves, for the architect has already interposed with his own interpretation. Even in contemporary western society, where this is a much-discussed problem, the architect's conception of what constitutes a satisfactory, working setting for a given life style may not entirely coincide with what people prefer (for a simple but entertaining example of this see

Edwards: 1974). It would be surprising indeed if his ancient counterpart had not been subject to the same difficulty of creating a design which accurately reflected, not merely the common denominators of domestic life, but also its variety, including the variably extended nature of families in real life, a variability which alters over time.

The close connection that could exist between family history and the structural history of the houses lived in, the latter following the fortunes of the former, can be illustrated in a very illuminating manner from Demotic written sources (Smith 1972), but this is something which the strictly planned housing scheme cannot readily cater for when conceived. An archaeological illustration can probably be found by comparing the two workmen's villages of the New Kingdom: the east village at el-Amarna (Peet and Woolley 1923: 51–91; Badawy 1968: 110–15), and Deir el-Medina at western Thebes (Bruyère 1939; Badawy 1968: 61–8; Bonnet and Valbelle 1975), both of which housed communities who cut and decorated the royal tombs at their respective sites. The el-Amarna village survives in its original state: a block of seventy-three more or less identical houses (though the plans of only half of them were excavated), and one larger one. The original plan of Deir el-Medina can no longer be determined (cf. Bonnet and Valbelle 1975), but presumably it was like the el-Amarna village in the use of identical housing units. Over a period of four centuries the whole village area had expanded laterally in the constricted valley, but the plan of its final stage also shows how individual houses had expanded, not by building upwards, but at the expense of neighbouring houses whose owners had presumably not been so successful or prosperous. The consequent range of house size will be investigated further below (for a written record of building work being done in the houses, see Janssen 1975: 394–5). Deir el-Medina incidentally affords an indication of how enduring the el-Amarna house type might have been in the New Kingdom. Even at the end of its history, more than two centuries after the end of the Amarna period, the focal point of each house was the central columned living-room, whilst in one of the larger houses (V.SO) this central room had become surrounded on four sides by other parts of the house, so producing a very characteristic el-Amarna design.

The 'standard villa' at el-Amarna has become probably the most widely known form of house from the pre-Classical world (in part due to the model originally published in Lloyd 1933). But the standardization of form is, at the same time, a matter of generalization. At a detailed level its diversity is almost infinite, not just in scale and in room arrangements, but also in its allocation of space and in its ancillary buildings. It seems fair to postulate that locked within this very diversity is a rich amount of information of a sort not to be found from other sources: that the degree of freedom, howsoever circumscribed, within which the houses were built is likely to reflect not only individual preferences but also some share of the broader matters of status and social relationships which combine to make a profile of society. However, the notion that some of this information can be abstracted and put to good use demands a certain optimism.

Egyptologists work for the most part with a fragmented 'inscriptional' view of ancient Egyptian society, moving towards a reconstruction of society as the Egyptians saw it, or on the terms by which they measured it. Yet even if one discounts the huge gaps which time has left in those records which were made, the reconstruction which is aimed for could never be complete in terms of the way that societies are now understood to function.

Originally, the ownership and rank of a great many of the larger houses must have been very apparent from the limestone door frames which bore the names and titles of the owners. Unfortunately, only an insignificant few have survived, so that to the question: 'would it be possible to cast the housing pattern into "inscriptional" terms?', the answer must be a definite 'no'. One could only produce a guessing game. On the other hand, it should also be pointed out that the wider implications of possessing any given title are as yet rarely, if ever, properly understood. One group of houses in the North Suburb were thought by the excavators to have been part of a mercantile quarter (Frankfort and Pendlebury 1933: 37–8; Pendlebury 1935: 43 ascribed some to 'corn merchants') on the basis of design alone. If this had been so, since there is in ancient Egyptian no term for a person who was a 'merchant' and at the same time an independent and prosperous person, the owners of these houses would presumably have still borne administrative titles, and the significance of the house layouts and the question of whether any commercial activities were part of their duties or part of their non-official life would still be left to speculation. As if to emphasize the point, a house of rather similar character in the South Suburb had earlier been found to have belonged to a chariotry officer (Peet and Woolley 1923: 9–15).

Wealth and status are things that would have been expressed in a whole variety of ways: not only by size and style of house, but by its furnishings, by other forms of wealth, by the rank and occupation of the owner and by his family and social circle, even perhaps by his dress, manners and speech. But of all these things, the only one that has survived to any degree complete and in measurable form is the architecture itself. It is one reflection of an ancient reality, so that even if an 'inscriptional' view of el-Amarna cannot be a realistic aim, a profile of its society in this one dimension can be to some extent constructed.

The work which I have done so far amounts to only a small beginning, more to examine the feasibility of various ideas and procedures, and to create a framework for the planned resumption of fieldwork at the site by the Egypt Exploration Society. To begin with, the variation in the plans is something eminently suited to breakdown by simple statistical means. In fig. 2 there is presented a histogram of house sizes in the North Suburb at el-Amarna (based on the plans in Frankfort and Pendlebury 1933), and because such things always gain in meaning through comparisons, a histogram of house sizes in the planned Middle Kingdom town of Kahun has been added (based on Petrie 1891: pl. XIV), and one of Deir el-Medina (based on Bruyère 1939; buildings N.E. XVIII, XIX were omitted because of doubts as to their true function). The value of a histogram is that it expresses the variety that is otherwise lost by dealing only with the 'typical' form of house. At Kahun, in so far as one can analyse the architect's design ignoring later alterations, there is a relatively sharp divide between the numerous smaller houses and the few really large ones, which could be even more marked if, as is possible, some of the intermediate buildings were primarily administrative rather than residential. A histogram for the east village at el-Amarna would display the most extreme form, with all houses of a single size, except for one larger house. In the el-Amarna North Suburb sample, however, there is no such obvious break: rather a graded profile in which it is difficult to decide, on house size alone, where some specific social division lay, particularly that between the literate 'officials' and others. The Deir el-Medina histogram
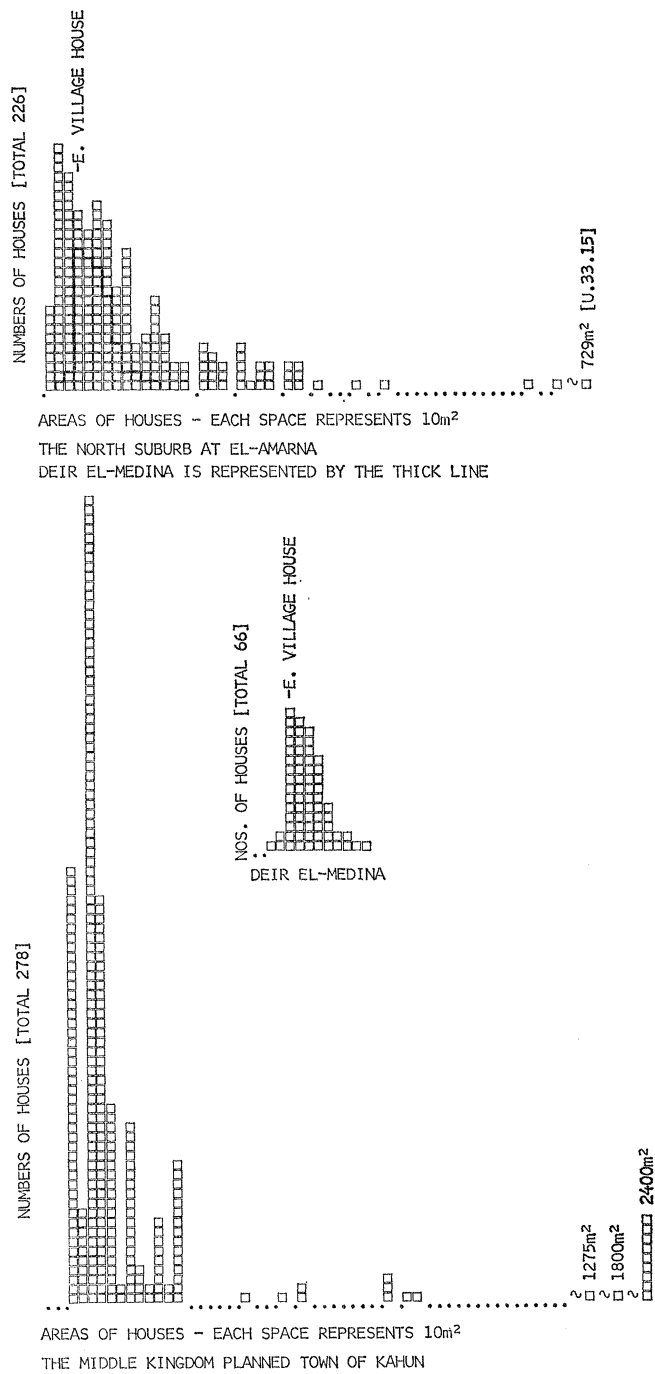
NUMBERS OF HOUSES [TOTAL 226]

—E. VILLAGE HOUSE

729m² [U.33.15]

AREAS OF HOUSES — EACH SPACE REPRESENTS 10m²

THE NORTH SUBURB AT EL-AMARNA
DEIR EL-MEDINA IS REPRESENTED BY THE THICK LINE

NOS. OF HOUSES [TOTAL 66]

—E. VILLAGE HOUSE

DEIR EL-MEDINA

NUMBERS OF HOUSES [TOTAL 278]

1275m²
1800m²
2400m²

AREAS OF HOUSES — EACH SPACE REPRESENTS 10m²

THE MIDDLE KINGDOM PLANNED TOWN OF KAHUN

Figure 2 Histograms of house sizes at el-Amarna, North Suburb, at Deir el-Medina, and at Kahun

reflects this profile in miniature, and even more perfectly. Bruyère had estimated that the original house size from which the final stage had developed was about 70 m.[2], thus somewhat larger than the east village houses, but evidently over a period of time individual advancement and enrichment had resulted in the expansion of some houses at the expense of others. With two of the largest houses (no. N.E. VIII at 119 m.[2], and no. S.O. II at 139 m.[2]), one is already in the ranks of the lesser officials: the chief workman Kaha, and the scribe Horsheri respectively (for their families and dates see Bierbrier 1975: 36–7, 40).

It may be possible, however, to make an even more graphic comparison between the ranges of house sizes in settlements. It has been a matter of some discussion amongst geographers that, when dealing with the overall range of settlement size in a country, a convenient means of expression seems to be by the use of lognormal probability graph paper (Berry 1961; Berry and Horton 1970: 64–75; cf. Crumley 1976). On this, the horizontal axis, used for plotting the settlement or city sizes, is divided according to the logarithmic scale; the vertical axis, used for plotting the cumulative percentages of settlements at given size intervals, is divided according to the normal (Gaussian) probability scale. When the plotted points lie in a straight line, it means that the logarithmic form of the normal probability distribution is present (cf. Doran and Hodson 1975: 48–50, 127–9). This is interpreted as a reflection of a mature urbanism which has developed as a result of many different forces acting over a long period of time. Although the factors which govern the sizes of houses within a settlement are obviously not analogous to those which govern the size of settlements themselves, the result of their operation without artificial constraint over a long period of time in a society which is not static may be expected to take the same form. It is, of course, an obvious fact of life, and one hardly worthy of remark, that in any normal settlement ever larger houses grow fewer in number. What is at issue is the regularity – ideally expressed by lognormal probability – with which size and number are associated, or the numbers of houses fall as sizes increase. The ideal, lognormal form is not something that can be readily created by planning: thus neither Kahun, nor the east village at el-Amarna, nor probably Deir el-Medina in its initial stage, possessed it. It must be an adjustment which happens over a period of time in a society in which wealth and opportunity are present in a similar set of graded proportions. In fig. 3 the data of fig. 2 have been plotted in this manner. The Deir el-Medina distribution approximates very closely indeed to a straight line, the el-Amarna North Suburb rather less so, although the greatest deviations occur towards the top where one is dealing with the sizes of individual large houses. The more important part of the distribution, the lower part which covers the majority of houses, deviates far less. Both stand in marked contrast to Kahun.

Many Egyptologists, at least, may have reservations on the value of observations such as these, based as they are on data other than texts. Unfortunately, the textual sources for social and economic history in the New Kingdom exist on a significant scale for one community only: Deir el-Medina. But such was the position of the village, largely maintained by the state for the purpose of creating the royal tombs, that it is natural to doubt that it was typical. Thus the recent study of commodity prices in the village by Janssen (1975), which includes discussion of the relative wealth of the workmen as well as of the economic structure of the community, concludes with these words: 'we seem
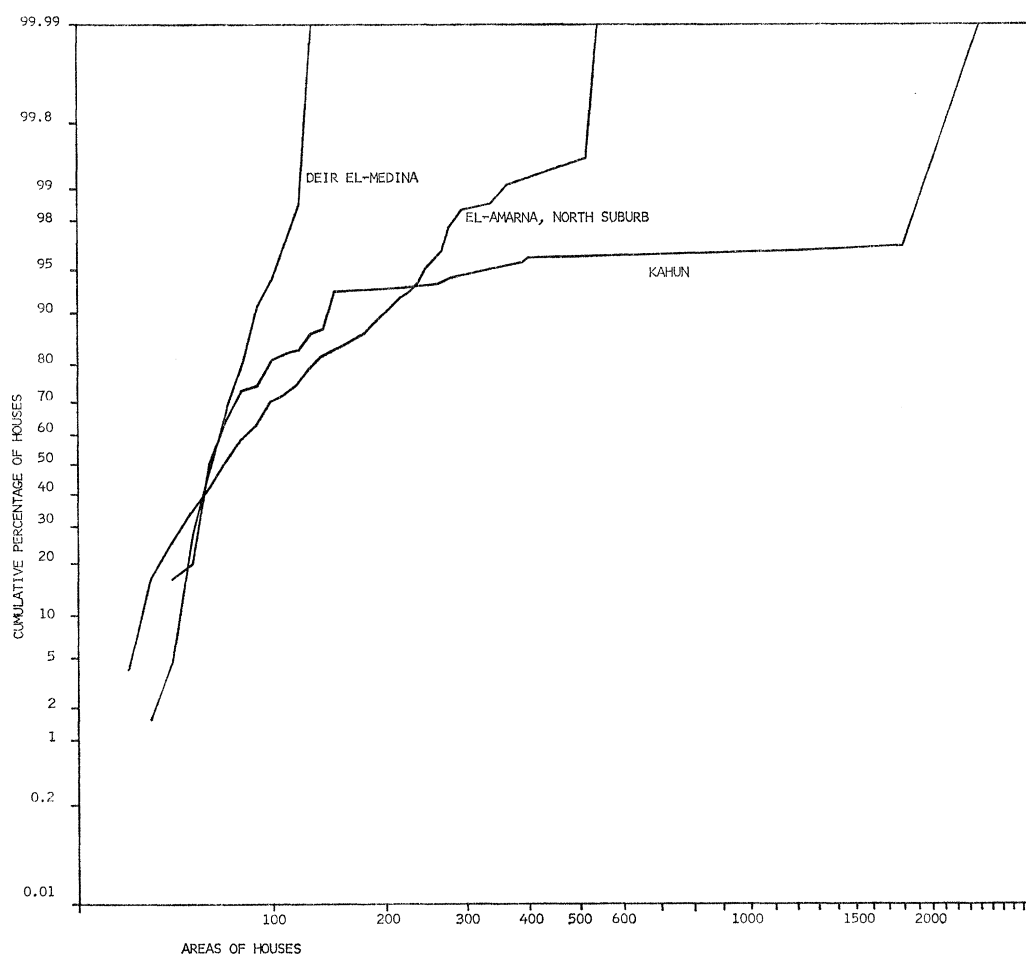
Figure 3 The data of fig. 2 plotted on lognormal probability graph paper

to be in the following paradoxical situation: the only community about which our know-
ledge of its economy is at present sufficiently extensive to allow of reliable conclusions
cannot be regarded as representative of the situation in the rest of the country'.

At present the *only* way in which Deir el-Medina can be related to the outside world of
New Kingdom Egypt is through its physical remains: its tombs and houses, in other
words, its architecture. It is for this reason that in fig. 2, the histogram of Deir el-Medina
has been inserted, as a heavier line, into that of the North Suburb at el-Amarna. The
distribution of house sizes can be seen to fall neatly within the el-Amarna profile, with
the omission of an appropriate proportion of the smallest houses. Thus its distribution
starts from a higher base. This seems to confirm the impression which the texts leave:
that its inhabitants were relatively affluent. However, as a community it was not complete
in itself. It is known from the texts that it was served by a proletarian group, called *smdt
(n bnr)*, 'the (outside) personnel', comprising water-carriers, wood-cutters, fishermen
and gardeners (Černy 1973: 183–90). Their houses are difficult to locate (that theirs were
the dwellings that lay to the west and the north, amongst the tombs and chapels, cf.

Bruyère 1939: 16–17, seems inherently unlikely), perhaps because they lay much closer to the cultivation, in front of Medinet Habu. But they probably provided the 'missing' smaller houses that would otherwise have made up the Deir el-Medina profile into one approximating much closer to that of el-Amarna. The other side to this argument is that, through the architectural connection, one can form some definite notion of how to 'pitch' the standard of living at el-Amarna itself.

Size of house is only one factor at el-Amarna. Another is the amount of space enclosed around or beside a house to accommodate extensions to household activities, as well as ancillary buildings. In fig. 4 the areas of houses have been plotted against the areas of these enclosed spaces, including the compounds surrounding the larger houses. The only house whose owner can be identified is that belonging to the 'Overseer of Works'

THE NORTH SUBURB AT EL-AMARNA: HOUSE AREAS PLOTTED AGAINST THE AREAS OF COMPOUNDS AND COURTYARDS.
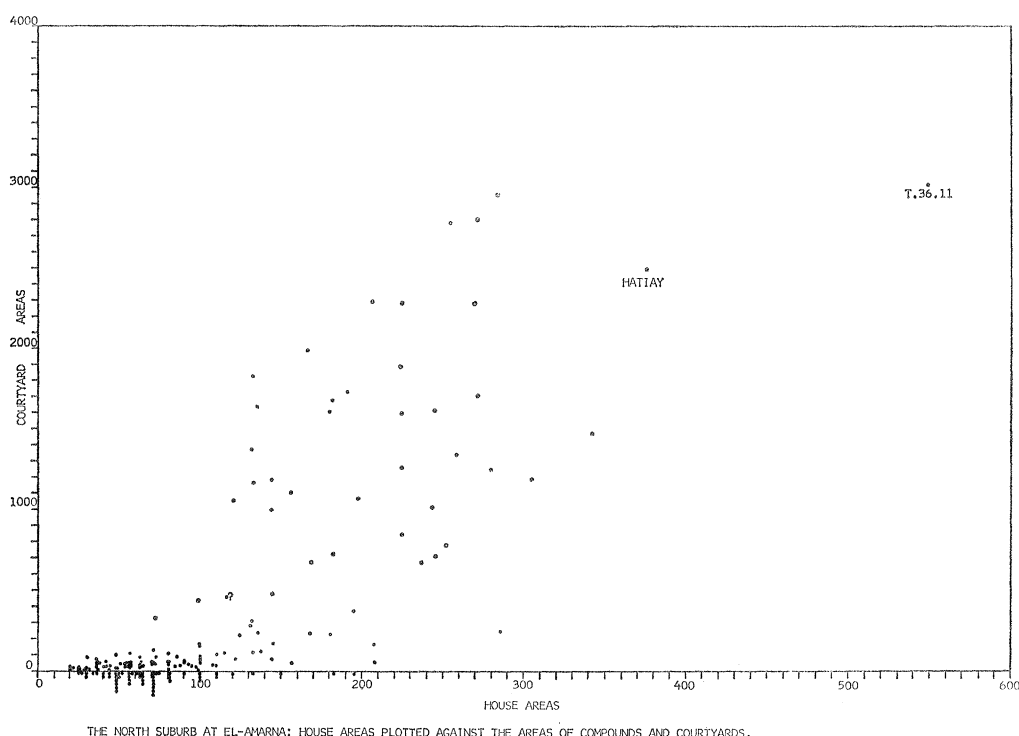
Figure 4 Diagram of house areas plotted against courtyard areas in the North Suburb at el-Amarna

Hatiay, whose house, as one of the larger ones, is towards the upper right-hand part. The first point to notice is that, of the intact houses and estates, the one which has served over the years as the typical upper class house, no. T.36.11, is not typical at all, being in fact one of the largest in this part of the city. This has perhaps contributed to the somewhat exaggerated opinions of the spaciousness and grandeur of the city which have sometimes been expressed. The second point is that, whilst the configuration has the makings of a curve, beyond a certain distance (say around houses of 100 m.^{2}), the spread of points quickly approaches, though it does not actually attain, a negative correlation. In other

words, for a given house above a certain size one cannot predict, except within limits that are extremely broad, what the associated space is going to be. This has the effect of blurring still further the distinctions of status expressed in architectural terms. The next step is to break down how the space was used, which at present, because of deficiencies in earlier excavation reports, can only be done crudely by the character of ancillary buildings. This is a step which must await a future occasion for exposition. But attention should be drawn to those houses whose size is by no means small, but whose associated open space was indeed so or even non-existent. Some of them possessed an entrance porch, a significant status symbol, and some were built in open areas which afforded ample opportunity for marking out a good sized space before the house was closely surrounded by other houses. There is no ready explanation for them, but they do serve to underline the marked degree of constraint shown in the occupation of land, and again this calls in question the idea of unusual spaciousness present in the city.

A second way of utilizing the city plans is by locational analysis. Because the city was not built as a series of planned blocks or by mechanically adding one house to another in a simple accretion process, the fringes of the city where development was still taking place when the site was abandoned, or had just petered out, are particularly informative on the manner of the city's growth, and on its underlying character. The smaller houses seem often to have been built as parts of irregular clusters or islands or nuclei. The one chosen to illustrate this (fig. 5) comes from the south-east part of the North Suburb, square U.36. It fronts on to East Road and was inserted into a large space, apparently leaving a large irregular vacant lot behind it. The houses were of the poorer type with walls of single brick thickness, necessitating numerous small buttresses inside, and had evidently not been laid out from some master plan, but one after the other, probably beginning at the street front with nos. 20 and 26. The group at the back, however, were finished off with a common straight rear wall, which emphasizes the discreteness of the block, which is left uncertain only on the north side with houses 29 and 40. Ignoring these last two, the group appears to consist of eleven definite dwellings, and two groups of rooms of uncertain status (18 and 36A). The circles marked on the plan are not individually identified in the excavation report, which is unfortunate since it would have led to a greater clarification of how individual spaces were used. They may have been cooking-stoves, circular pottery hearths, column bases, or just holes in the ground. Some of the small rooms may have been left open to the sky, but as far as one can tell from the plan alone, these eleven houses possessed five courtyards amongst them. The small circles in the corners of some of these may well have been cooking-stoves. The largest L-shaped one, built around the group of rooms numbered 18, is marked as containing a larger circular structure, its size probably identifying it as a small corn storage bin (cf. Frankfort and Pendlebury 1933: 99). This adds to the impression that the courtyards were to some degree communal.

Because of denudation, many doorways were no longer distinguishable, but in the plan likely positions based on room arrangements have been indicated by heavy lines. In many cases this leaves the doors facing outwards from the block, but at least half the houses also had internal stairways up to the roof, which would have allowed social contact within the house group, although houses 20, 26 and 27 are more isolated at this level. The fact that the houses were built in an agglomerative way instead of individually in the

Figure 5 Group of houses in the North Suburb at el-Amarna, square U.36

considerable space available, and the hint of shared facilities, strongly implies that the occupants shared some common background and ties. Social anthropology supplies an obvious explanation: a house group like this accommodated an extended family. For this there are numerous well-studied African parallels, particularly in the compounds of the walled Hausa cities of northern Nigeria (Schwerdtfeger 1971; Schwerdtfeger 1972; cf. also Flannery 1972), and the same thing can be found in the villages of modern Egypt.

At this point it is useful to draw attention to two contrasting types of space involved: positive space and negative space (cf. Wirth 1975: 73-4). By positive space I mean those areas deliberately enclosed and intended to form extensions to the living-space; thus courtyards for cooking, keeping animals, and carrying on various domestic or minor industrial processes. Negative space simply surrounds the houses or house groups, but is gradually diminished by in-filling with further houses and courtyards, and ultimately survives only as means of access ('streets' or 'alleys'), or just as irregular open spaces where rubbish could have been thrown, public wells situated, or communal activities pursued. The plans themselves sometimes preserve traces of how this took place, mainly in the wall alignments, but in the case of the German expedition plans, also in the details

of wall abutments, although these were probably not consistently observed to judge from the results themselves.

It is from the German excavations in the South Suburb that fig. 6 is derived (after Ricke 1932: Tafel 5). It is intended to show, from a study of the wall alignments themselves, the successive stages by which a space, created partly by large estate walls and partly by what was most likely a street, was filled in. In the first stage there were probably three separate house groups of the type just described. Beside the one on the west a public well was sunk, with its associated hut, and this house was extended around the north side of it. In the centre of the principal remaining space a house of medium dimensions (about 126 m.²) was built. Instead of enclosing the greater part of the vacant

STAGE ONE

STAGE TWO

STAGE THREE

N

0   5   10   15   20
METRES

Figure 6 Hypothetical stages in the development of a small area of the South Suburb at el-Amarna, squares P.47, 48

BWA

area, its owner seems to have limited himself to a narrow space around two sides of his house, which could have accommodated little in the way of domestic facilities. It is very hard to see how any of the other spaces could have belonged to it, and there are several parallels from elsewhere in this city for this situation, which was commented on briefly above. A small house built against its west side created a little 'street', whilst the very irregular space to the south was subsequently filled by two more houses which created more individual open spaces, one of them apparently hemmed in on all sides and not used.

The degree of constraint in occupying space shown by many houses raises an interesting question. How was a fully established city community (or communities if it was drawing on both Memphis and Thebes) containing a whole, functioning bureaucracy and some of the presumably most influential people in the land, with existing property rights and community ties, transported to an entirely fresh site? Without written sources one can only guess, but even so, the options are probably fairly limited. The basic requirement of administrative continuity must mean that a timetable was followed, with officials with common areas of responsibility (departments) being given dates for reporting for their duties at the new city. A simple architectural solution would have been to follow the timetable laterally on the ground, thus grouping larger houses according to the administrative responsibilities of the owners. The few *in situ* inscriptions are not really sufficient to act as a check on this, but the scheme would have had the obvious disadvantage from the point of view of the people involved of severing existing networks of community ties and obligations. These could have been preserved if, within the system set up to facilitate the move, it was possible to space out the locations of the first houses such that space was left for the rough equivalents of existing neighbourhoods gradually to be transplanted. Building would then have proceeded at any number of points at the same time. It should be pointed out that the time it took to accomplish the basic move is not easily determined. Some houses in the North Suburb were apparently still under construction when the city was abandoned. But one cannot exclude the possibility that they were simply part of normal city expansion in a time of prosperity, built for people either recently appointed to the capital from some other place, or younger members of existing families, perhaps recently promoted, setting up homes in a 'new' suburb.

Considering the constraints imposed by the situation, including the distance from both Thebes and Memphis which may have prevented many people from spending much time at the new site before their houses were completed, the infinite variety in house design and layout of ancillary structures points to one conclusion. Either from a preference for something familiar and known to be convenient, or by government control, which could have extended to a survey of basic estate areas, or by a mixture of the two, and allowing for a degree of opportunism and dishonesty, basic property areas were transferred from the old site to the new. If I am right in suggesting that urban renewal was a significant process in New Kingdom Egypt generally, then there may well have been in existence by the late Eighteenth Dynasty a well established form of contact between owners and contractors for the building of houses on new sites. Thus the new city, unlike a planned town or workmen's village, began its life with the sort of mature plan and housing range which would otherwise have taken probably decades to develop.

So far the discussion has been all about the plans of buildings. What of the role of artefact analysis? In the case of a sculptor's workshop or a glazing kiln the archaeological record provides some direct indication as to the profession of the occupant of the associated dwelling, but these are exceptional cases. Although none of the published excavation reports approaches the level of detail demanded by an analysis of small finds house by house to seek further indications of profession, it is unlikely that this approach has much potential, and for one simple reason: much of the debris in houses above a certain, probably fairly modest, level must derive from the activity of servants. Important though this record might be for a better understanding of domestic economy, it is not likely to help much in trying to ascertain what lies behind the diversity of the housing.

This paper began by asserting that el-Amarna is not so artificial a city that one cannot derive from it information of a wider relevance for New Kingdom Egypt. In the end this assertion will stand or fall on the results of excavations carried out elsewhere. Whatever these might be, it is important that comparison or contrast be not limited to impressionistic statements. If the long-term purpose of excavating settlement sites is not merely to record changes in such things as ceramic styles, but to see in the changing record one aspect of the evolution of ancient society, then quantitative methods of some sort for the architecture will be as necessary as for the smaller artefacts. In the long-term this may well be their most important contribution.

3.xi.1976   *Faculty of Oriental Studies*
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References

Aldred, C. 1968. *Akhenaten, Pharaoh of Egypt: a new study*. London: Thames and Hudson.

Badawy, A. 1968. *A history of Egyptian architecture: the Empire (the New Kingdom)*. Berkeley and Los Angeles: University of California Press.

Baer, K. 1962. The low price of land in ancient Egypt. *Journal of the American Research Center in Egypt*. 1:25–45.

Berry, B. J. L. 1961. City size distributions and economic development. *Economic development and cultural change*. 9, no. 4:573–88.

Berry, B. J. L. and F. E. Horton, (eds) 1970. *Geographic Perspectives on Urban Systems*. Englewood Cliffs, New Jersey: Prentice-Hall.

Bierbrier, M. L. 1975. *The late New Kingdom in Egypt (c. 1300–664 B.C.)*. Warminster: Aris and Phillips.

Bonnet, C. and Valbelle, D. 1975. Le village de Deir el-Médineh: reprise de l'étude archéologique. *Bulletin de l'Institut Français d'Archéologie Orientale*. 75:429–46.

Bruyère, B. 1939. *Rapport sur les fouilles de Deir el Médineh (1934–1935). Troisième partie: le village, les décharges publiques, la station de repos du col de la Vallée des Rois* (Fouilles de l'Institut Français du Caire, tome XVI). Cairo: Institut Français.

Černy, J. 1973. *A Community of Workmen at Thebes in the Ramesside Period* (Bibliothèque d'Etude, tome L). Cairo: Institut Français.

Crumley, C. L. 1976. Toward a locational definition of state systems of settlement. *American Anthropologist.* 78:59–73.

Davies, N. de G. 1929. The town house in ancient Egypt. *Metropolitan Museum Studies.* 1, part 2:233–55.

Davies, N. de G. 1963. *Scenes from some Theban Tombs.* Oxford: Griffith Institute.

Desroches, C. 1938. Un modèle de maison citadine du Nouvel Empire (Musée du Louvre: N° E.5357). *Revue d'Egyptologie.* 3:17–25.

Doran, J. E. and Hodson, F. R. 1975. *Mathematics and Computers in Archaeology.* Edinburgh: Edinburgh University Press.

Edwards, M. 1974. Comparison of some expectations of a sample of housing architects with known data. *Psychology and the Built Environment.* pp. 38–47 (eds D. Canter and T. Lee). London: The Architectural Press.

Fairman, H. W. 1949. Town planning in pharaonic Egypt. *Town Planning Review.* 20:32–51.

Flannery, K. V. 1972. The origins of the village as a settlement type in Mesoamerica and the Near East: a comparative study. *Man, Settlement and Urbanism,* pp. 23–53 (eds P. J. Ucko, R. Tringham and G. W. Dimbleby). London: Duckworth.

Fletcher, R. 1975. *Space in Settlements.* Cambridge, unpublished Ph.D. dissertation.

Frankfort, H. and Pendlebury, J. D. S. 1933. *The City of Akhenaten,* part II. London: Egypt Exploration Society.

Janssen, J. J. 1975. *Commodity Prices from the Ramessid Period.* Leiden: Brill.

Kemp, B. J. 1972. Temple and town in ancient Egypt. *Man, Settlement and Urbanism,* pp. 657–80 (eds P. J. Ucko, R. Tringham and G. W. Dimbleby). London: Duckworth.

Kemp, B. J. 1976. The Window of Appearance at el-Amarna, and the basic structure of this city. *Journal of Egyptian Archaeology.* 62:82–99.

Kemp, B. J. 1977. The early development of towns in Egypt. *Antiquity.* 51. (Forthcoming.)

Kemp, B. J. and O'Connor, D. 1974. An ancient Nile harbour: University Museum excavations at the 'Birket Habu'. *International Journal of Nautical Archaeology and Underwater Exploration.* 3:101–36.

Lloyd, S. 1933. Model of a Tell el-'Amarnah house. *Journal of Egyptian Archaeology.* 19:1–7.

Peet, T. E. and Woolley, C. L. 1923. *The City of Akhenaten,* part I. London: Egypt Exploration Society.

Pendlebury, J. D. S. 1935. *Tell el-Amarna.* London: Lovat Dickson and Thompson.

Petrie, W. M. F. 1891. *Illahun, Kahun and Gurob.* London: Nutt.

Ricke, H. 1932. *Der Grundriss des Amarna-Wohnhauses.* Leipzig: Hinrichs.

Schwerdtfeger, F. W. 1971. Housing in Zaria. *Shelter in Africa,* pp. 58–79 (ed. P. Oliver). London: Barrie and Jenkins.

Schwerdtfeger, F. W. 1972. Urban settlement patterns in northern Nigeria (Hausaland). *Man, Settlement and Urbanism,* pp. 547–56 (eds P. J. Ucko, R. Tringham and G. W. Dimbleby). London: Duckworth.

Smith, H. S. 1972. Society and settlement in ancient Egypt. *Man, Settlement and Urbanism*, pp. 705–19 (eds P. J. Ucko, R. Tringham and G. W. Dimbleby). London: Duckworth.

Stevenson Smith, W. 1958. *The Art and Architecture of Ancient Egypt.* Harmondsworth: Penguin.

Wirth, E. 1975. Die orientalische Stadt. Ein Überblick aufgrund jüngerer Forschungen zur materiellen Kultur. *Saeculum.* 26:45–94.

Abstract

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The city of el-Amarna as a source for the study of urban society in ancient Egypt

King Akhenaten's short-lived capital of el-Amarna still seems to offer the least fragmentary example of a city layout from New Kingdom Egypt. Although often regarded as of unusual spaciousness, taking advantage of the ready availability of building land on a desert site, there are strong grounds for arguing that, at the least, its range of housing reflects a mature, developed urbanism that must have been transplanted from a parent site, and even perhaps that it exemplifies a more expansive form of urbanism that had developed much more widely in Egypt during the New Kingdom. Since inscriptions are so few, and since pottery and small finds probably belong as much to ubiquitous servant activity as to anything else, the architecture remains the most significant reflection of the society that existed there. Possible ways of evaluation are sketched out. The study is intended as a background to the planned resumption of fieldwork at el-Amarna by the Egypt Exploration Society.