

# AMARNA REPORTS I

BARRY J. KEMP  
EGYPT EXPLORATION SOCIETY

3 DOUGHTY MEWS, LONDON WC1N 2PG

## AMARNA REPORTS I

The Egyptian city of (Tell) el-Amarna was built by King Akhenaten around 1350 B.C. as a new capital and as the showpiece for his new cult of the life-giving powers of the sun, the Aten. Following his death the city was rapidly deserted, after an occupation of between about fifteen to twenty years. This short-lived history makes the site immensely important for archaeological studies. In 1979 the Egypt Exploration Society resumed its programme of excavation and survey at Amarna, interrupted since 1936. The current excavations have been concentrated at an isolated settlement in the desert behind the main city, the Workmen's Village. At the same time a project of archaeological mapping for the whole city has been undertaken. This volume presents an interim report on excavations and survey, and various technical reports, including the first results of a major distribution analysis of pottery. Whilst the results contribute to our knowledge of the nature and history of Amarna specifically, they also illustrate the behaviour of one human community, isolated in space and time, as manifested through archaeology.

OCCASIONAL PUBLICATIONS

1

EDITED BY A.J. SPENCER

AMARNA REPORTS I

by

BARRY J. KEMP

*with contributions by*

T.J.L. ALEXANDER, C.R. DONALD, W.P.H. DUFFUS, C.A.I. FRENCH,  
H.M. HECKER, G. HOSEY, L. CARLESS HULIN, I.J. MATHIESON,  
P.J. ROSE, I.M.E. SHAW and V.R. SWITSUR

THE EGYPT EXPLORATION SOCIETY  
3 DOUGHTY MEWS, LONDON WC1N 2PG  
1984

LONDON  
SOLD AT  
THE OFFICES OF THE EGYPT EXPLORATION SOCIETY  
3 DOUGHTY MEWS, LONDON WC1N 2PG

© *Egypt Exploration Society, 1984*

BRITISH LIBRARY CATALOGUING IN PUBLICATION DATA

Amarna reports. - (Occasional publications.

Egypt Exploration Society, ISSN 0265-4261, 1)

Vol. 1

1. Amarna (Egypt) - Antiquities

2. Excavations (Archaeology) - Egypt - Amarna

I. Kemp, Barry J. II. Series

932 DT73.A/

ISBN 0 85698 094 3

## CONTENTS

	Preface	v
Chapter 1	Patterns of activity at the Workmen's Village	1
<b>REPORTS ON 1983 FIELDWORK</b>		
Chapter 2	Chapel 561/450 (The "Main Chapel") [Ann Bomann]	14
Chapter 3	Chapels 570 and 571 [Christopher Hulin]	34
Chapter 4	The animal pens (Building 400) [Ian Shaw]	40
Chapter 5	Commodity delivery area (Zir-area) [Linda Hulin]	60
Chapter 6	The main quarry and its chronological record [Christopher Hulin]	81
Chapter 7	The Amarna Survey: survey of the city [Salvatore Garfi]	89
<b>TECHNICAL REPORTS AND DISCUSSIONS</b>		
Chapter 8	A resistivity survey at el-Amarna by Ian J. Mathieson	99
Chapter 9	Ring bezels at el-Amarna by Ian Shaw	124
Chapter 10	The pottery distribution analysis by Pamela Rose	133
Chapter 11	Preliminary report on the faunal remains by Howard Hecker	154
Chapter 12	Pottery cult vessels from the Workmen's Village by Linda C. Hulin	165
Chapter 13	Radiocarbon dates by V.R. Switsur	178
Chapter 14	A sediments analysis of mud brick and natural features by Charles A.I. French	189
Chapter 15	Geomorphology and prehistory at el-Amarna by Charles A.I. French	202

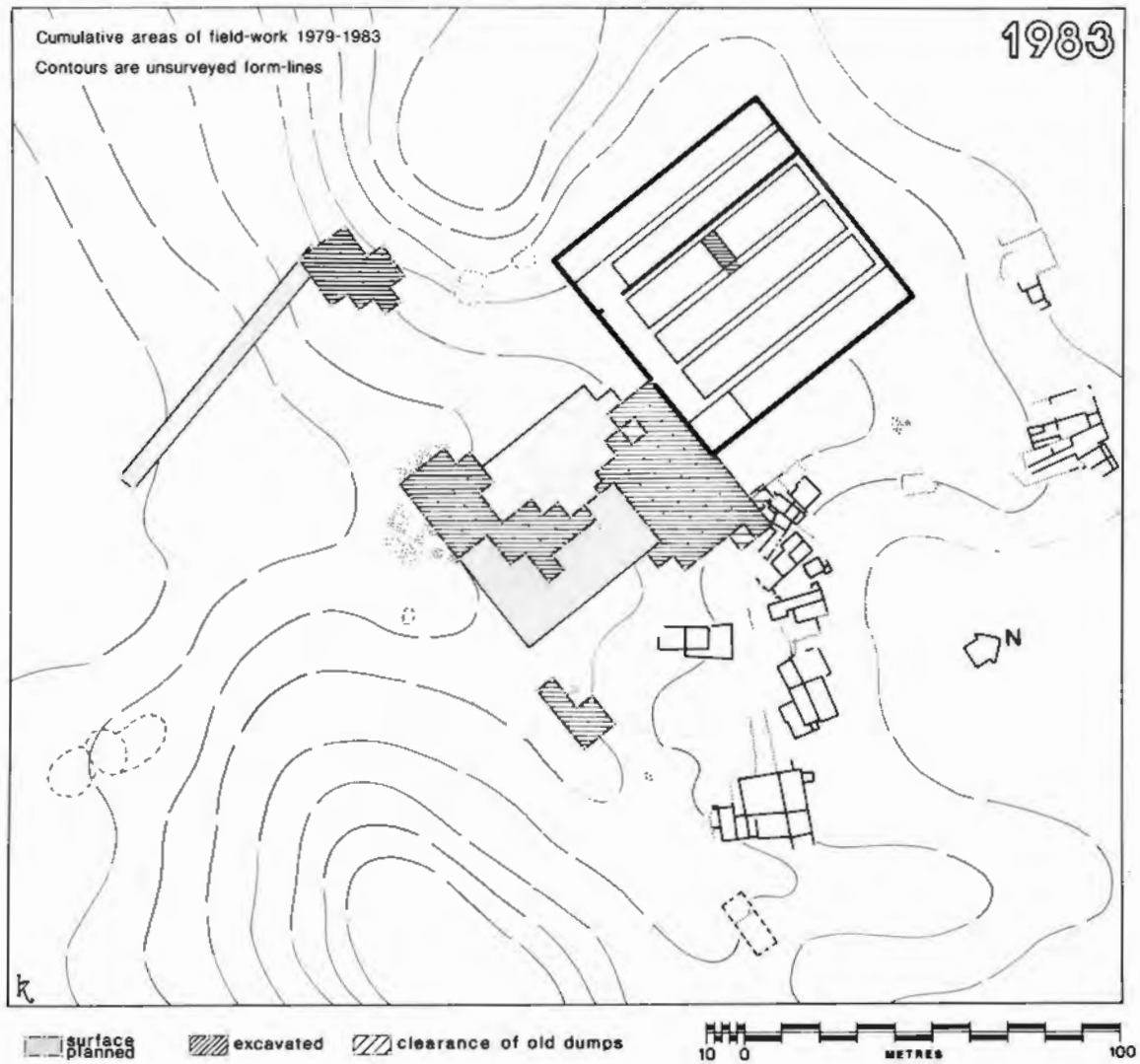


Figure 0.1. Map of the Workmen's Village, showing cumulative fieldwork carried out between 1979 and 1983.

## PREFACE

The current excavations at the Workmen's Village began in 1979, and still require two or three further seasons before the site can be said to have been adequately examined. For each season a preliminary report has appeared in the *Journal of Egyptian Archaeology*. However, the space available in the *Journal* is necessarily limited, and the short reports do not cover the full range of the expedition's findings. This applies particularly to subsequent analysis. The purposes of publishing this separate volume of reports are to describe the excavations in a little more detail, and, more especially, to make available the results of specialist research far more quickly than would be the case if all was left to a final publication.

Some of the chapters bear the names of individual authors, the rest were compiled by Kemp. In these cases, however, the basis is the field record made by individual team members whose names appear as sub-headings in the relevant chapters. The full staff list for 1983 runs as follows: Ann Bomann, Christopher and Linda Hulin, and Ian Shaw (site supervisors); Salvatore Garfi (Amarna Survey), Joanna Defrates (registrar), Barbara Garfi (conservator and artist), Pamela Rose and Paul Nicholson (pottery), Dr. Howard Hecker (animal bones), Mr. and Mrs. Ian Mathieson (resistivity survey). The Egyptian Antiquities Organization Inspector was Yahya Zakaria Mohammed, to whom a great many thanks are due, as also to his colleagues in Minia Province: Mahmud Hamza and Samir Anis; and to Dr. Ahmed Kadry, Dr. Aly el-Khouli, and the other members of the Higher Committee of the Antiquities Organization in Cairo, for both granting the permit to work at Amarna, and for assisting the expedition to function smoothly and efficiently.

For the setting up of the printed text of this volume and for use of analytical programs, the expedition is grateful for the facilities provided by the University of Cambridge Computing Service, and to the assistance of Pieter Brooks of the Computer Laboratory. The Amarna Survey was financially supported by a further grant from the Robert Kiln Foundation; Pamela Rose's pottery analysis benefited greatly from a grant from the Thomas Mulvey Fund of the University of Cambridge; Mr. Stanley Hattie also kindly made a further donation for improvements to the expedition house at el-Amarna.

## TECHNICAL NOTES

Most of the current excavation is outside the Walled Village, and is controlled by a grid of five-metre squares originating at a point in the south-west of the site. The squares are identified by prefixes consisting of a letter, representing the west to east axis, and a number for the south to north axis. The squares not only provide a framework of reference, but have also been used throughout as excavation units. Sections have been drawn along most of the grid lines, but no baulks retained, since the goal is area clearance.

Between 1979 and 1981 the site recording system recognised primarily stratigraphic soil layers, called "levels" and numbered in circles, beginning with no. 1 in each square. In the text of this volume level numbers are placed in round brackets, thus (1), with the five-metre square designation as prefix, e.g. M10(1). In 1982 the system was revised to incorporate all kinds of debris, not only layers, but walls, cuts, fills, and so on. These are now called "units",

and numbering is sequential over the squares and from one season to the next. On the plans unit numbers appear in rectangular boxes, and in the text are written in square brackets, thus [416].

In the excavation photographs, the wooden scale that appears is 1 metre long.

## BIBLIOGRAPHY AND REFERENCES

The references for Chapters 1 to 7, which report on the 1983 fieldwork, will be found at the end of Chapter 7. References for the subsequent chapters, written by individual authors, will be found at the end of each of their chapters.

The following abbreviations have been used throughout:

- BIE*: *Bulletin de l'Institut d'Égypte*. Cairo.  
*BIFAO*: *Bulletin de l'Institut Français d'Archéologie Orientale*. Cairo.  
*BMMA*: *Bulletin of the Metropolitan Museum of Art*. New York.  
*COA*: *The City of Akhenaten* (see the references to Peet and Woolley 1923, Frankfort and Pendlebury 1933, and Pendlebury 1951 on pp. 96-8).  
*JARCE*: *Journal of the American Research Center in Egypt*. New York.  
*JEA*: *Journal of Egyptian Archaeology*. London.  
*JESHO*: *Journal of the Economic and Social History of the Orient*. Leiden.  
*JNES*: *Journal of Near Eastern Studies*. Chicago.  
*Lexikon*: W. Helck and E. Otto (later W. Helck and W. Westendorf), *Lexikon der Ägyptologie*, Band I-. Wiesbaden, 1975-.  
*MDAIK*: *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo*. Cairo.  
*MDOG*: *Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin*. Berlin.  
*REA*: *Revue de l'Égypte Ancienne*. Paris.  
*SAK*: *Studien zur altägyptischen Kultur*. Hamburg.  
*SSEA Journal*: *Society for the Study of Egyptian Antiquities Journal*. Toronto.  
*Urk IV*: K. Sethe, *Urkunden der 18. Dynastie*. Leipzig, 1905-09.  
*ZAS*: *Zeitschrift für ägyptische Sprache*. Berlin.



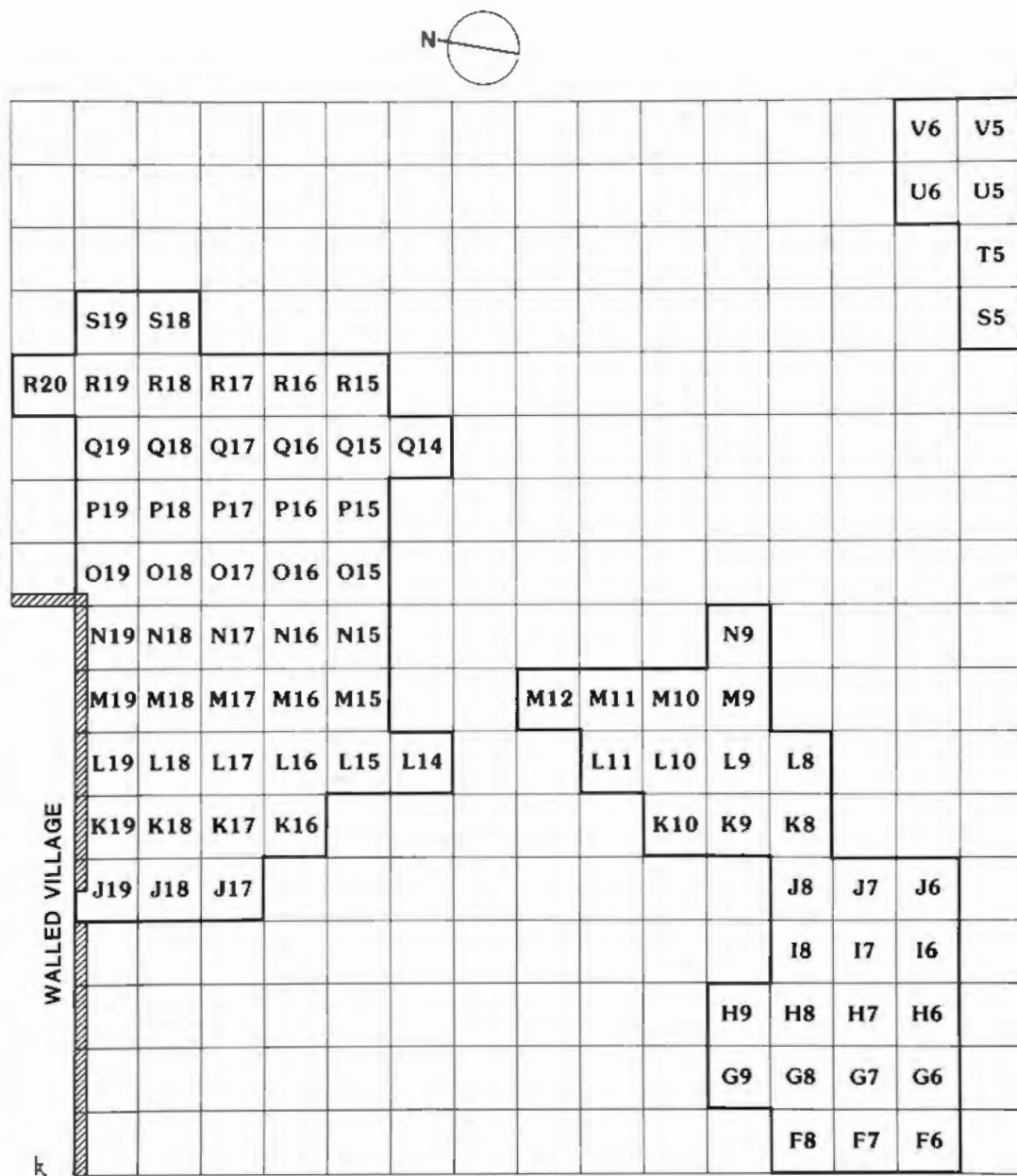


Figure 0.2. Diagram of the main grid of five-metre squares. Labeled squares are those of the 1979-83 excavations.



Figure 1.1. General view of the 1983 excavations, looking east.

## CHAPTER 1

## PATTERNS OF ACTIVITY AT THE WORKMEN'S VILLAGE

Five seasons of excavation at the Workmen's Village have brought us within sight of the end of the current programme of research there. Of those parts where work remains to be done many have already been partly excavated so that something of their nature and purpose is evident. The principal exception is the zone lying to the east of the Walled Village, between the village wall and the hill slope where the chapels commence. Despite this, now is a suitable moment to survey the results as a whole, and to draw from them a general picture of how the site was used by the ancient inhabitants themselves. A significant hypothetical element is present, but this is in the nature of archaeological work. Excavation strategy is to some extent determined by the preconceived notions that we have, and at a mature stage in an excavation it is most desirable that the ones that will influence the final decisions reflect an overall working series of explanations for the site, based on the full range of observations recorded so far.

The ensuing discussion is complete in itself, in that it does not assume a prior knowledge of the site. It is hoped that archaeologists and others interested in man's past will be able to see the site as a record of one community's behaviour which was caught within a short interval of time. However, for those who have followed the excavation through its previous preliminary reports, references back to these reports are also made. In some cases the earlier reports will focus in a little more detail on individual points. Frequently this will be done by subsequent chapters of this volume.

The Workmen's Village derives its name from a square, walled village which lies in the desert isolated from the main city of el-Amarna, at a distance of about 1.2 kms. Half of the interior was dug in the 1920s, together with a line of small brick chapels on the adjacent hillside (Peet 1921; Woolley 1922; Peet and Woolley 1923; Anon. 1925). It was then called the Eastern Village, but gradually the term Workmen's Village has replaced it (e.g. Frankfort and Pendlebury 1933: v).

The village was built on the floor of one branch of a shallow Y-shaped valley in a low plateau which runs out from the foot of the cliffs that surround the Amarna bay (Figures 1.2 and 14.1, and cf. Chapter 15). Any discussion of the site must begin with this village since the site possesses no other visible object of human interest. We must thus assume that everything else at the site was in some way or other dependent on it. As to why it was there at all, two possible explanations can be advanced, which are not necessarily exclusive to one another.

The one which has found the greater favour since the time of the original excavation sees the village as housing workers and artists employed in the cutting and decorating of rock tombs. Possible involvement in the Royal Tomb is complicated by the existence of a second and still unexcavated village lying a kilometre to the east (Figures 1.2 and 14.1; Kemp 1978: 26; 29, Figure 4; Plate

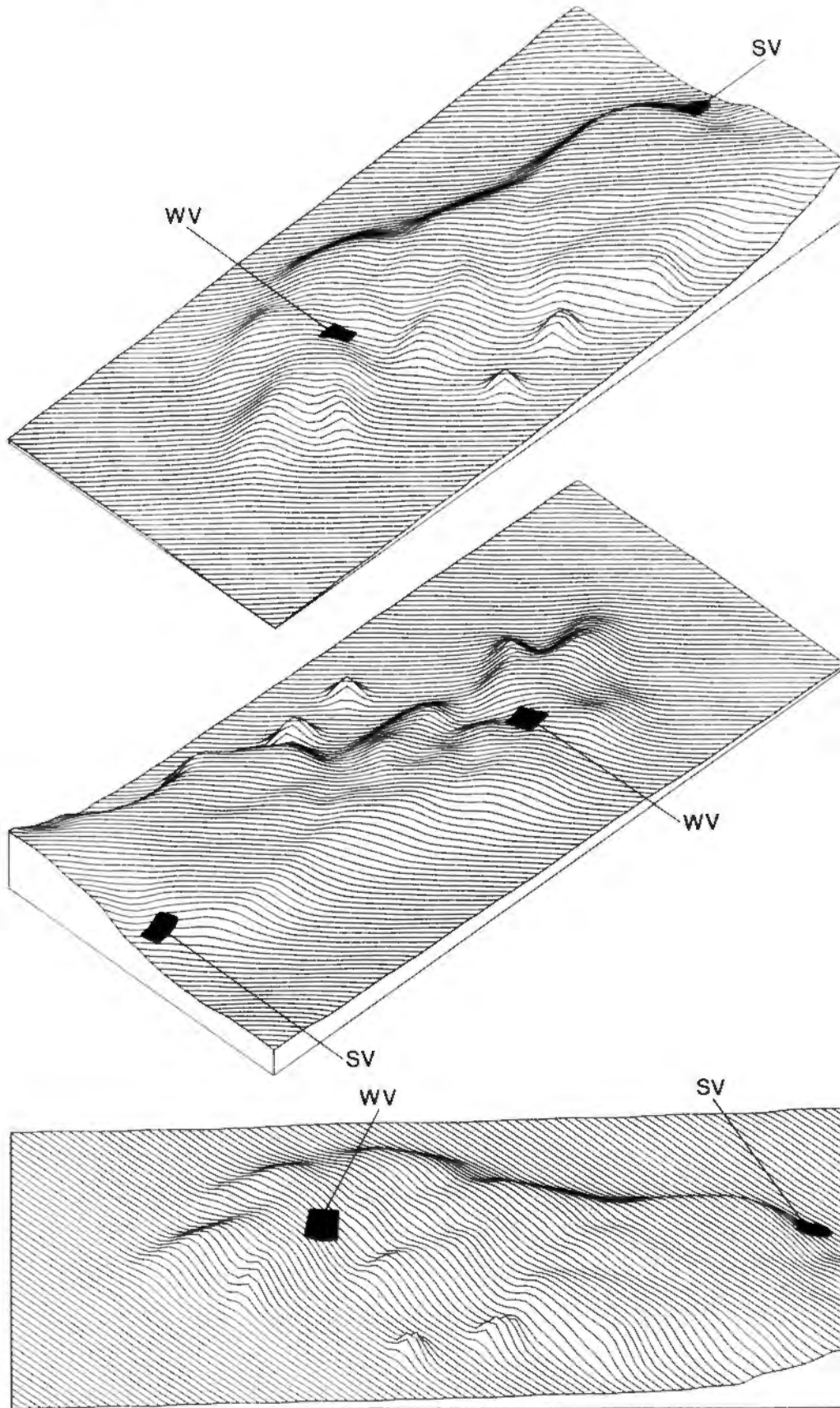


Figure 1.2. Landscape models of the Workmen's Village area, showing the relationship between the Workmen's Village (WV) and the Stone Village (SV). Cf. Figure 14.1.

VII.1). The Southern Tombs, however, are within easy walking distance and are, in fact, the only part of the city directly visible from the village. The tomb-builders explanation is strongly supported by the obvious parallelism with Deir el-Medina at Western Thebes, a village with this very function documented by ample written evidence (Bierbrier 1982).

The second explanation arises from the network of ancient tracks that criss-cross the desert behind the main city. Some lead directly to conspicuous rock tombs and mark processional routes to them. Many, however, cross from north to south, and are best explained as marking the routes for the patrols of the police which we know were stationed in the city (Tomb no. 9, of the southern group, belonged to a police chief of the city, named Mahu, see Davies 1906: 12-18). The network of fixed roads would have made the regulation of the patrolling easier, particularly at night, when their slightly ridged edges would have been just visible, even by starlight. Within the network the village occupies a central place, very suitable for manning a foot-patrol system.

The general consensus is that the first explanation offers the better clarification of the village's purpose. The question is also, however, intimately connected with the puzzling last phase in the village's history. It would seem that in the reign of Tutankhamun, by which time Akhenaten's plans were dead, the occupants of the village still regarded themselves as permanent residents with a future there, and built their chapels accordingly. Work on the rock tombs at Amarna seems to have ceased abruptly after Akhenaten's death. [1] It is easier to imagine that guards were required to look after the rapidly emptying city and the Royal Tomb where Akhenaten's burial had been made, than that tomb workers were kept on in idleness when their skills may have been needed elsewhere, even, perhaps, back at Thebes.

For each explanation one piece of documentary evidence can be cited in support. Amongst the 1921 finds, from Chapel 529 (Peet and Woolley 1923: 100-101, Figure 15; 105), was a rectangular wooden pedestal bearing the name of a man Nehem-ma'atiu (cf. Ranke 1935: 208.6; Hari 1976: no. 195). This man bore the title "Servant of The Place", a title very close to one commonly used by the Deir el-Medina workmen (Gauthier 1917; Černý 1929; Černý 1973: 45). The other document was found in the current season, in the Sanctuary of the Main Chapel. It is a small wooden panel, painted on both sides. In Chapter 2.9 the evidence is presented for identifying it as the top of a military-style standard owned by a company of police or soldiers. This identification bestows added significance on other pieces of evidence which together point to the Main Chapel having been used by soldiers or guards.

There is an intriguing third possibility, rooted in the stratigraphic history of the site (cf. Chapter 6; Kemp 1983: 7-14). This is that both explanations are correct, but sequential. The village was built for tomb workers, abandoned for a while, and then re-occupied in the reign of Tutankhamun by a contingent of

-----  
 [1] The last datable work is in the tomb of Meryre II, no. 2, where one scene depicted Smenkhkare and Meritaten (Davies 1905: 43-44, Plate XLI).

guards.

It has to be admitted, however, that both our own and our predecessors' excavations have contributed little in the way of specific factual evidence to the discussion of why the village was there at all. The arguments remain essentially circumstantial, and are likely to be settled now only from the discovery of more specific documentary evidence. What the archaeological record mainly offers is evidence for the way of life of the people who were brought to live there for whatever reason. It is in this behavioural context that archaeology makes its unique contribution. Naturally, the life of the villagers must have been constantly influenced by their work obligations, and this must have left its mark in the archaeological record. Nevertheless, their work habits were also embedded within far more basic patterns of behaviour relating to their survival and to their social and psychological needs. These form the main subjects of our investigations.

Brevity of occupation is a famous attribute of el-Amarna. In the specific case of the Workmen's Village some of the dating evidence is dealt with in Chapter 9. But this has to be set within the general dating framework for Amarna as a whole. Briefly stated, this is fixed by the following facts:

1) the Boundary Stelae make regnal year 4 the year in which Akhenaten founded the city.

2) Akhenaten reigned into his 17th regnal year. Inscribed objects show that occupation continued through the reign of his successor Smenkhkare (whose length of reign is uncertain, but generally thought to have been very short), and into the reign of Tutankhamun, who abandoned the city and Akhenaten's entire reforming enterprise. Fifteen years, or a little more, can thus be allotted to the official occupation of Amarna.

3) the Workmen's Village may be a special case, in that a whole new phase of activity began only after Tutankhamun had come to the throne. The evidence for this will be mentioned below, and examined more closely in Chapter 9 (on ring bezels), and in Chapter 6 and part of Chapter 10 (on pottery) devoted to the key stratigraphic sequence in square M10 (also Kemp 1983: 14). We have, however, no guide as to how long this phase lasted. All that we can say is that the pottery and artefacts appear to be more or less homogenous, and that we have found nothing from the Workmen's Village mentioning the name of a king later than Tutankhamun. Tutankhamun reigned into his 9th year. If we extend the occupation until the end of his reign, we reach a total history of twenty to twenty-two years.

The Walled Village itself measures approximately 70 metres square. It was surrounded by a thick enclosure wall with a single gateway on the south side, and was divided into two unequal parts by an equally thick partition wall. The bricks for these main walls are a mix of alluvial mud and gravel, the standard brick material for the main city, but used in quantity here only for these walls (see Chapter 14 for brick material analyses). They may thus have been delivered from a government agency in the main city. Within the enclosure seventy-three house plots of identical size were laid out, together

with one larger house, presumed to be for the official in charge. Once laid out, it seems to have been the responsibility of the individual households to build up the walls and finish off their houses. For this they were not supplied with building materials, but had to use whatever was available locally. The standard building materials became bricks made from marl (calcareous mudstone) obtained from quarries in front of the village's site, and the rounded boulders which occur prolifically in layers within the bedrock, and sometimes reach the surface. Individual initiative also produced a range of internal variation in the details of house layouts. One of the most noticeable is that ovens seem to occur in only a minority of cases. From this one might deduce that the village did not consist of seventy-four self-sufficient households, but that some degree of economic interdependence existed.

According to the earlier excavators (Peet and Woolley 1923: 53) the western sector of the village was an addition, though not necessarily much later than the first part to be built. They also argued (*ibid.*: 66-67) that the lack of small finds and structural debris from collapsed roofs in the houses of the western sector was evidence that this part had been evacuated first, and that in the eastern sector, the population surviving into the reign of Tutankhamun lived in growing poverty.

As yet, the current expedition has confined its activities within the village to the clearance of a single specimen house, Long Wall Street 6, an adjacent short stretch of street, and a trench beneath the floor of Long Wall Street 7 (Kemp 1980: 10-12). We thus have little to add at present to the old description. The trench beneath the floor of Long Wall Street 7 brought to light shallow deposits of rubbish and ash, but nothing sufficient to suggest an earlier period of occupation. The expedition's future plans do, however, embrace the excavation of a group of houses on the east side of the village, along East Street. Nevertheless, the general picture of the site's history which has emerged from the current work does not support the idea that in the time of Tutankhamun the community was becoming impoverished. The contrary seems to have been the case. Consequently the history and nature of the west section of the village will need to be re-examined in time.

The main quarry for brick raw material was close to the middle of the valley floor, and was taken down to a depth of between 2.5 to 3 metres. Two smaller pits were cut closer to the village, together with irregular shallow diggings. The main hindrance in quarrying were beds of stones and boulders. The various diggings rapidly filled up with rubbish once occupation began, and thus were no longer able to supply material for bricks. It is possible that other sources, in the hillsides, were exploited, but as yet the most promising sites have not been examined properly, and it may be wrong, in any case, to expect this activity to have left anything datable. Whatever the sources, the demand for bricks exceeded supply once the village was established. This is particularly evident in two buildings: the Main Chapel and the animal pens. In the former bricks were used for the chapel proper and the two roofed rooms of the annexe, whereas the various courtyard walls were mainly of boulders set in marl mortar. In the latter case, it is very noticeable how the later additions used stone much more than brick, which had been widely used for all parts in the original construction. Scarcity of bricks probably also explains

a find made in 1981 immediately in front of the village wall, towards the east end (principally square M19). This was a collapsed heap of reused marl bricks, undisturbed since the village was deserted. Presumably they had been carefully gathered from old buildings and stacked ready for re-use.

The government decision to site the village in the eastern desert created the archaeological site under consideration. The nature of the sediments that we have excavated, and the survival of stretches of ancient desert trackways across much of the Amarna plain make the same point: the area was as much desert in Akhenaten's day as it is now, so that local crop-growing by the villagers is highly unlikely (see also Chapter 15). We have no figure for the depth of the modern water-table at the site, but it must be considerable. An attempt to dig a well would have left traces that we should have encountered by now. We may take their absence as sufficient evidence that the villagers had no water supply of their own. They must have been dependent for water and for cereal foods and animal fodder on deliveries made from the main city as part of the redistributive (or rationing) system so well documented elsewhere in Egypt. Deir el-Medina provides an important case in point (Bierbrier 1982: 40-41).

We thus have to consider two important flows of material in bulk: water and foodstuffs into the village, and refuse out of it. Both are represented on the ground in a substantial way.

The walled village itself was compact and densely built up, and by the end of its history had only a single gateway, measuring not much more than a metre in width. Through this had to pass the three or four hundred villagers, and probably some of their animals from time to time. [2] The institutional background to the village, particularly as illustrated by Deir el-Medina, implies that the inhabitants were supplied by periodic deliveries from an agency, belonging either to the Palace or to a temple. A monthly food delivery seems to have been normal. Presumably water was brought daily. As yet we cannot localise in the main city the source of supplies, although there is no shortage of possibilities. The nearest very large wells appear to be beside building P49.16 (Borchardt and Ricke 1980: 279-80), and beside the unexcavated building lying to the north, beside the shallow wadi, in squares Q and R48 (cf. Kemp 1981: Suppl. 4 and 5). The nearest large grain store may have been the double circular granary O51.1 (Petrie 1894: 24; Borchardt and Ricke 1980: 334-35). The distances from the Workmen's Village are 1.3, 1.5 and 1.8 kms. respectively.

It is easy to imagine that the distribution of rations to the villagers, if done actually within the village, would have been accomplished only with difficulty, particularly if discussion and argument were involved. This is a real possibility in view of the records of ration disputes at Deir el-Medina (Bierbrier 1982: 41). These considerations provide the background to the identification of

-----  
[2] The evidence for animals within the village includes feeding troughs in the streets (Peet and Woolley 1923: 55, 68-69), and the stone enclosure near the south-west corner in which animal dung and chopped straw were found (ibid., 54).



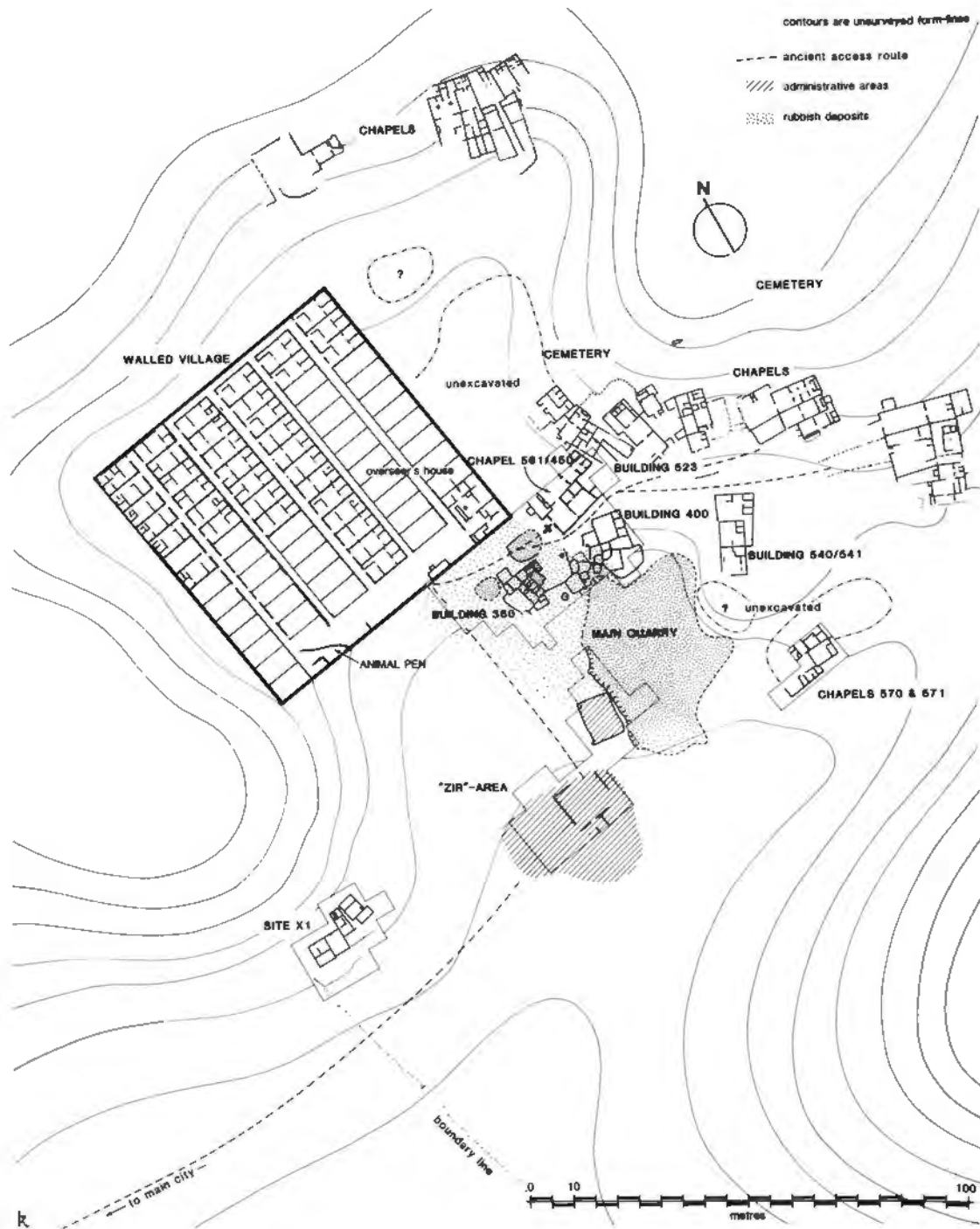


Figure 1.3. General map showing 1921-22 and 1979-83 excavations.

the southernmost area of remains as the actual delivery and distribution point (see Chapter 5). Apart from the evidence of structures and pottery, the general plan (Figure 1.3) shows how it lies at the natural junction of the route from the main city, and the village's own territory in the side valley. This territorial junction seems to have been recognised more formally by the

construction of site X1, excavated in 1979. Although when taken on its own the little collection of rooms that makes up this site conveys no obvious message as to its main original use (other than not being residential), by its location it fits well the role of a control post commanding access to the site from the city, and from the desert to the south, including the South Tombs, directly visible from it. To make the territorial junction even more explicit to those coming from the city, a boundary line of stones was laid from site X1 southwards across the line of the main path. It is interesting to note that 50% of the dog bones from the Workmen's Village faunal sample were from site X1 (see Chapter 11).

The location of the delivery area offered clear advantages to the villagers. In the first place, the intrusion of the delivery teams coming up from the main city was limited. Having passed the check-point (site X1), they reached the delivery area almost immediately, and had no need to proceed close to the walled village at all. The walled village, with its single tiny entrance, kept its privacy intact from the outsiders. In the second place, the delivery area itself provided enough space for a good many of the villagers to assemble at delivery times and offer group authority in dealing with the officials responsible for the distribution. The Deir el-Medina documents reveal very clearly how that community possessed a strong sense of group identity, and how, in disputes over ration distributions, concerted group action could arise. Much of this documentation belongs to a period of internal economic or administrative difficulties in the Twentieth Dynasty. But it is fair to assume that the reign of Akhenaten generally, and the rapid creation of his new city in particular, were also attended by a degree of economic disruption. The isolation of the Workmen's Village would have left it particularly exposed to the consequences.

The outward flow of refuse from the village was considerable. Superficial examination of it suggests that it is a mixture of kitchen refuse (oven ash, charcoal, and grain husks from milling), floor sweepings (including sherds and linen threads), and animal dung (although the latter may have come also from the separate animal pens outside the village). Disposal was in the obvious places: the pits and quarries left from the marl digging. The resulting build-up of rubbish deposits provides the most important stratigraphic key to the village's history. In the case of the pits close to the village it shows that they were filled before the first set of animal pens was built. Although the main quarry was never completely filled, refuse was also dumped on the flat desert surface around the pits. In doing this, however, the villagers took care to keep it away from the path leading up to the village gate from the distribution depot. The biggest accumulations outside the pits seem to have been on the hillside to the south-east of the village. In the course of dumping here, the earlier set of animal pens, which seem to have been very short-lived, were buried. The edge of the later set and the edge of the annexe (450) to the Main Chapel were subsequently built on top (cf. Figure 4.7).

One point still remains unclear. In the main quarry, the upper level of dark soil interleaved with beds of compacted chaff represents rubbish dumped during the last phase of the village's history. Its distinctive character is best explained from its proximity to the later animal pens. It may well be manure regularly cleared out from them. If this is so, one is left without a refuse

dump from the village itself during this last phase. It was certainly not close to the village wall, for by now the ground in front of the village and over the older animal pens had been levelled to become part of the territory belonging to the Main Chapel.

The study of animal bones from the excavations reveals three main domesticated meat species: cattle, goat and pig (Chapter 11; Kemp 1983: 21, 24). The limited range of cattle bones and the general unsuitability of the local conditions for keeping cattle probably mean that the villagers obtained this meat in the form of joints brought in as part of their rations. A particular type of pottery jar, identified as a meat-jar by inscriptions (the type is Figure 10.1, type 13), is common in the repertoire of pottery types. Goat and pig, however, were far more suited to life at the village itself on account of their more catholic eating habits. Having said this, however, it should be noted that an analysis of goat droppings from Site X1 (Chapter 4, section 10) identified grass and date-palm as part of the diet, whilst droppings from the animal pens appear to be rich in grain husks.

Two sets of buildings have been identified as animal pens: building 350 in front of the village, and building 400 on the raised ground to the east, just south of the Main Chapel. The reasons for identifying them as pens are the designs of certain parts (especially the tiny sizes of the doorways) and the accumulations of manure and dung inside. In Chapter 4 these reasons are dealt with in more detail, and the evidence is presented for favouring pig rather than goat. Pigs, it should be noted, have a high loss rate of body moisture in heat, and without shade would die in the summer temperatures. Their water requirement is also large, adding to the demands on the water delivery lines from the main city. Not all parts were in use simultaneously. Building 350 extended towards building 400, and possibly joined up with it when they were first built. But after a fairly brief life, building 350 was abandoned. When the site was finally deserted, building 400 was in use, and had been altered slightly, and extended westwards over the rubbish that had accumulated over the ruins of building 350.

These two buildings seem to have been built specially for the keeping of animals. But animals were also kept in other places. As noted above, the excavations of the 1920s recovered limited evidence for animals kept within the village, the most significant being the stone enclosure near the south-western corner. Peet and Woolley (1923: 69) also reported "goat dung" in a building dug but not planned just to the east of the north-east corner of the village. Another location where small round droppings, presumably of goat, have been found during the current excavations is Site X1. They were in the floor deposits of a collection of tiny rooms between the two main parts of the building. These tiny rooms must have been for the penning of goats. Their location again speaks for the individual initiative which is required to explain so much of the site as a whole. Animals were also probably kept in chapel annexes, as discussed in Chapter 2, although it may have been for only limited periods.

The areas chosen for these three activities - receiving deliveries from outside, waste disposal and animal keeping - belong to a simple pragmatic

pattern of utilisation of the ground. The final stage in the village's history, however, introduced a consideration of a different kind, which led to an important modification in ground use.

It has been a matter of comment for many decades that there is no cemetery at Amarna, apart from the two groups of rock tombs which high officials were obliged to make in furtherance of the king's plans as outlined in the Boundary Stelae. It is possible that a general necropolis was started on the west bank, but if this was so it has so far escaped detection (cf. Grimm 1975: 235). An alternative hypothesis is that, as deaths occurred, bodies were shipped back to family tombs at Thebes or Memphis or wherever else supplied Amarna with its population. The Workmen's Village appears to have been a partial exception. Both on the slope of the eastern hill overlooking the village and on the top of the plateau behind it, earlier generations of archaeologists have reported finding the remains of a smallish number of tomb shafts and chambers, though without providing a map or any details (see Peet and Woolley 1923: 51, 94-95). The tombs seem to have been generally robbed. If family tombs were intended, as was common practice in the New Kingdom, the small number of tomb entrances may be no guide to the numbers of burials made or intended. It thus remains ambiguous whether the villagers intended the nearby hill to be their main cemetery, or if they joined the rest of the citizenry in transporting some of their dead outside the Amarna plain altogether.

This question is intimately linked to another. The villagers built a whole series of chapels to the east and south-east of the village. Peet and Woolley (1923: 94) assumed that they were tomb chapels. Whilst they may well have served this purpose once a burial had been made, other considerations, discussed in chapter 2, lead one to believe that this was not their initial purpose at all. They were built to have a role in the life of the village. So far, about thirty have been found, and more may exist in the unexcavated ground to the east of the village. We may thus estimate that at least one household in two built its own chapel. Family interrelationships within the village could have brought the totals of chapels and families much closer together.

We cannot tell when chapel building began in the life of the village. The more distant ones, including nos. 570 and 571 excavated in 1983 (see Chapter 3), are not linked by useful stratigraphy to the main part of the site. Their relative position cannot therefore be clarified. Only close to the village does it become possible to make this kind of direct connection. Principally this involves the Main Chapel. It was built only in the village's last phase, thus during the reign of Tutankhamun. It occupied the prime site in relation to the village, but the alignments of its walls in relation both to the village and to the retaining wall beneath "Chapel" 523 (see Chapter 2) imply that it was built after the latter. Indeed, the very real possibility of a distinct two-phase history of the site means that the Main Chapel, which in size and design stands apart from the others, may have replaced the others, as a communal place of gathering and worship instead of the individual family chapels. This leaves all of the remaining chapels suspended uncertainly in terms of the village's chronology. The striking documentary evidence from Chapels 525 and 529 that traditional deities were commemorated alongside the Aten was taken

by Peet to indicate a date subsequent to Akhenaten's death (Peet and Woolley 1923: 95-98). If this is so, apart from implying that the villagers managed without chapels for much of their time there, it adds to the puzzle of the last phase in the village's occupation. By the traditional view of the history of the Amarna Period, the villagers should already have been well aware that Akhenaten's ideas had lost favour at court, and that a return to orthodoxy was imminent if not underway. Yet the Main Chapel on its own, with its wall paintings, represents an investment of time and effort which must rate as quite considerable in the villagers' own terms, to judge from what else they built, including their own houses. The chapels look like the work of a community with confidence in a settled future at the site. Yet the history of the Amarna Period offers no insight into why they felt like this. This phase in the village's history must reflect some local development over which we can only speculate, for example, by regarding the village as now occupied by guards.

The ground chosen for the chapels is the flanks of the hill on the east side of the village. From what little information we have about the tombs at the site, they too seem to have been clustered on and around this hill. Both occupy the position in relation to the village which cemeteries in the Nile Valley frequently had to their settlements: on the side towards the desert.

The entrance to the Main Chapel lay at right angles to the path leading up to the village gate. As will be described in the next chapter, the Main Chapel had two entrances: one probably a formal one for use only in restricted circumstances, the other, lying a short way to the south, probably the normal means of access. To reach the entrances from the gate meant walking in front of the village wall for about thirty metres, across or beside some of the rubbish-filled pits. More than just walking was involved, moreover. The path to the southern entrance to the chapel was marked by a line of little ritual basins in the shape of the letter 'T' (Figure 1.4). They were cut into the ground, and lined with marl plaster or bricks. Signs on the inside showed positively that they had been filled with water. The line terminated in a more elaborate basin in front of the Chapel entrance. In this case the basin was modelled on the basins which sometimes stood in front of real temples, and given a miniature quay flanked by flights of steps (Kemp 1980: 12-14, Plate II.1).

The line of basins transformed the strip of ground in front of the village into an extension of the territory of the Main Chapel. A certain amount of rubbish seems already to have accumulated here, and more did so until the village was abandoned. The thickness is sometimes not great, and it may be the product of wind deposition and trampling rather than deliberate dumping. The fine bedding layers within it are horizontal, and part of the accumulation is really only dusty sand. When the site was abandoned the surface of the ground was so flat and even as to have more the appearance of a terrace which had been deliberately kept flat and clear. By this time the earlier set of animal pens (Building 350) was ruined, and the stratigraphy shows that the nearer parts at least must have been largely buried and almost invisible (cf. Kemp 1983: 8, Figure 3). The nature of the ground at this stage also tells us along which side of the row of basins people most likely walked whilst making their way to the Main Chapel. If they had walked to the south of them, their

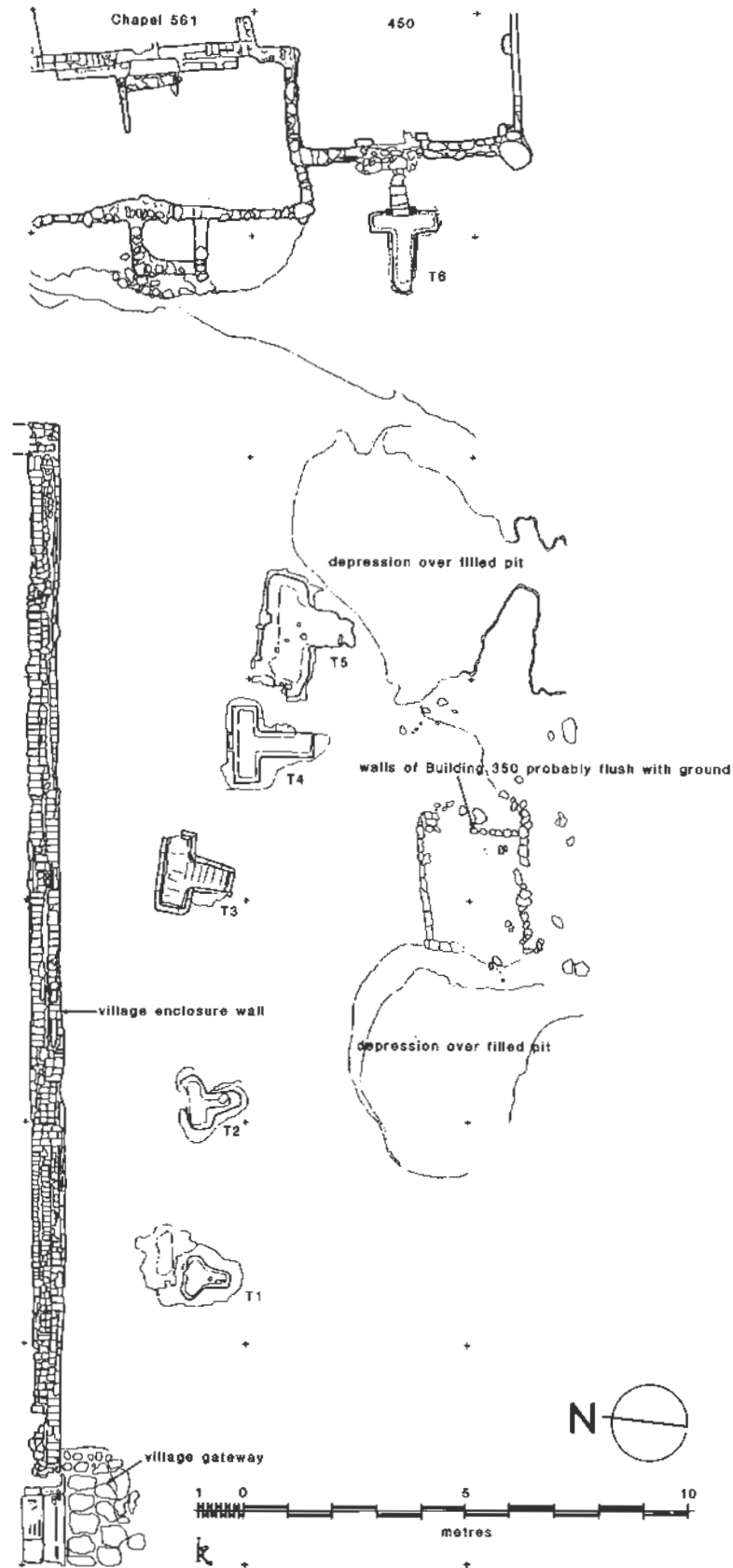


Figure 1.4. Ground in front of the Walled Village, showing T-basins and front of the Main Chapel.

path would have taken them across the depressions marking the sites of two rubbish-filled pits, and beside what was left of Building 350. This seems a less likely path than the very even surface offered by the ground along the north side. If this is true, then the T-basins were intended to be faced from the top of the "T" rather than from the bottom. This agrees with the alignment of T-basins flanking the main route into the temple of Hatshepsut at Deir el-Bahri (Winlock 1942: 90, Plate 44, plan on end papers).

The chapels were places where meals were eaten. This is sufficient to explain the annexes to some chapels, both here and at other sites. Bread was baked in them, and animals may have been kept as well. Annexe 450 supplies explicit evidence, and Building 523 probably falls into the category of animal pens as well (Chapter 2.8). Another possible set of animal pens is the group 540/541, dug by Peet (Peet and Woolley 1923: 101, Plate XXIV), although this remains to be tested by re-excavation.

On the proximity of chapels to animal pens, it should be noted that the Main Chapel was separated from Building 400 by only a narrow east-west "street", and that the entrances to both were separated by only some ten metres. This "street" is probably the beginning of a path which gave access to many of the chapels lying along the southern flanks of the hill. It was marked by lines of stones. Although on the published map (Peet and Woolley 1923: Plate XXIV) these stone lines appear discontinuous, this may be because they are partly buried beneath the excavators' own spoil heaps, the map having been made after the excavations were completed. It is also a continuation of the route out from the village gate to the Main Chapel via the line of T-basins. In this it is one of only two internal routes which can be detected at the site so far, the other being from the delivery area directly up to the village gate.

In reviewing the excavation results so far, both the internal evidence and the analogy of Deir el-Medina create a reasonably credible set of explanations for the distribution of the various remains over the site. The village was a satellite of the main city, and shows a combination of adaptations both to its dependency, and to local conditions. Where we should feel uncertain is in the history of the village. Its latest phase appears not to be a direct reflection of the late, or post-Amarna Period as we have come to know it from other sources. In this respect the site is making its own historical statement. A clearer understanding of the implications may have to await the transfer of the excavations into the main city.