

**A DISCUSSION OF THE HOUSE AND PLANNING
AS THE LINKS BETWEEN SOCIETIES AND
CIVILIZATIONS : 7000 B.C. - A.D.1.**

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ABSTRACT

The objective of this thesis is to examine and if possible demonstrate the connections and links, the interaction, between societies and civilizations in ancient times. I carefully considered how this could be achieved bearing in mind the questionable depth and veracity of our knowledge of prehistoric and historic societies and civilizations but particularly the prehistoric period. While there is, in one sense, a wealth of information in the structural remains and artefacts known to us yet we are deficient in our understanding of many ancient societies and civilizations. In the historical period we have the major problem of sieving the truth from the extant ancient writings which have been shown to contain inaccuracies, distortion of fact, bias, pure error, propaganda, embellishment, the list is almost endless.

With these problems in mind I came to the conclusion that the best mode was to concentrate on what I consider are two of the essential building blocks in the evolution of humankind, the house and planning. In the house we have the architectural remains unearthed by archaeologists or, as in the earliest society I consider, the negative archaeological remains. I consider planning to be an inherent function in every human being and it is a function which continually shows change but one whose physical implementation can be seen in the archaeological remains.

The final problem was the time-span of my survey and my view was that the wider the time-span the greater the field of comparison thus enhancing the level of proof. The paradox was that this approach limited the societies and civilizations I could investigate to any great extent and possibly incurring the charge of bias in my selection but the constraints imposed left me no alternative. I decided the period to be covered by my study should be from 7000 B.C. to A.D. 1 with the emphasis of my study on the Graeco-Roman world.

The two earliest societies I consider do not lie within either the Grecian or Roman worlds but each incorporate not only reasonably clear signs of planning but also architectural features such as the long-house and the courtyard which are to be seen, as I indicate, in future societies and civilizations. I treat the Grecian and Roman worlds separately but draw comparisons between each, where appropriate, both in architecture not only of the house but also public buildings and in planning. While I concentrate on the house and planning I refer where it is necessary to those

events and factors which bring their influence to bear either directly or indirectly on the house and planning

I believe there is a correlation between the house and planning but the factor necessary to express this is the architect, a person we cannot identify in the prehistoric period and in the historic period is really not much better known to us. I have considered Vitruvius and his treatise and while it gives us some insight to the architect of his day I have not really advanced my attempt to know and understand how knowledge and skills were passed on. The skills and knowledge of the prehistoric architects were really exceptional as is evidenced when we look at the architectural remains of their achievements; there is the possibility that the accumulated knowledge of the Minoan and Mycenaean civilizations was not lost in the Dark Age and simply re-emerged in the Archaic and Classical periods in Greece but this is an assumption on my part.

I believe I have proven my hypothesis that there is an interaction and there are recognisable connections between societies and civilizations, that ancient civilizations contribute their knowledge and skills to the further evolution of future societies and civilizations. I am not aware of any earlier arguments adopting this approach but I think these connections do exist and may warrant further research.

DECLARATION

This thesis is submitted in accordance with the regulations for the degree of Master of Philosophy by Research in the University of Glasgow. No part of it has previously been submitted for a degree in this or any other University. It is based entirely on the author's own research. Where the author has used information provided by other scholars both the scholars and their sources have been acknowledged.

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INTRODUCTION

The Graeco-Roman World has been discussed, dissected and analysed in its many forms over the centuries and as new facts come to light old and respected opinions have become obsolete or changed beyond recognition. There is the reassessment of old conceptions applying a more modern and scientific approach to the material remains, new hypotheses are formulated and the process continues. My interest is in what I call the two essential building blocks in the evolution of humankind, the house and planning, and while much has been written on the house, and perhaps less on planning, how these two blocks develop and interact in the evolution of humankind has not, I believe, been given much consideration. It is my conception that the house and planning are the main factors in what I perceive to be the connections or links between societies and civilizations, connections which are important to the advancement of those societies and civilizations. The succeeding societies and civilizations adopt and adapt, discard or even radically change and, in some instances, reintroduce old ideas, but the ingredients and the pattern are consistent, the house and planning are those that best suit that society or that civilization. It may be considered that these are generalizations but I believe I can demonstrate, on the evidence we have, that these connections and links did exist and operate in the period 7000 B.C. down to the beginning of the 1st. century A.D.

Without planning we do not have a base for the evolution of humankind or society. It is my opinion that planning is an inherent factor in humans since they first appeared: initially planning to maintain their existence in what must have been a hostile world. With the advent of the Hunter/Gatherers a form of society, however basic, was beginning to develop. We may call them a group or a tribe, but the group planned their moves to accord with the seasons and the appropriate food sources which those seasons brought. It may be argued that this progress was necessitated by circumstances rather than planning but archaeology has now shown that the Hunter/Gatherers moved in groups and established a regular food cycle. ¹ We know the Hunter/Gatherers were working their territory on an annual rota moving between specific sites within their territory such as transitory camps, hunting blinds, butchery or kill sites, storage caches and home base camps for particular seasons. ² There can be no doubt that planning ahead was essential to their survival: it is an early form of planning.

In our own society when we refer to planning we usually mean town-planning but it may be asked what is town-planning ? It is a concept which does not allow a precise and definitive description because the concept is constantly changing and adapting to the requirements of a particular period. One definition which has been advanced by B.J.Collins is “ the organising of building and land use in pursuance of an express scheme of urban or rural evolution “³ and, while it could be argued that this is not totally accurate it does encapsulate the main concept which is to make the best use of land for the welfare of the individual, the community and the nation. Another proposed definition by Lewis Keeble is “ the art and science of ordering the best use of land and the character and siting of buildings and communication routes so as to secure the maximum practicable degree of economy, convenience and beauty “⁴ Both of these definitions express contemporary thinking and reflect the views, or purport to, of our present day society on land use. The important exception is that of environmental issues which in recent times have now come to bear heavily on what is proper land use.

In the evolution of humankind from Hunter/Gatherers to Neolithic agriculturists we can see, in my opinion, the first expression of practical planning in their providing the family unit with shelter, the house. The house is a necessary fixed point in their lives in order that they can cope with the demands of the agricultural cycle, preparing the ground, sowing the seeds, tending the crop and reaping the harvest then starting all over again. The house is the permanent feature in their working and social lives, it is the hub of all their activities and as such is planned accordingly. It provides not only shelter and warmth but it harbours their beliefs, it is their world. As I will show in Chapter 1 in the early days of the Neolithic agriculturists the planning of their home was essential to their understanding of their world and the distribution of space in the home reflected not only their lifestyle but also the deities they believed influenced their lives. As they become more sophisticated in the methods they develop and diverse in the crops they produce they begin to form communities and a more complex society evolves but still the house is their world. The house does start to change as society begins to stratify and elites emerge and this can be seen in the early civilizations I consider in Chapter 2. While the home remains the focus of the family unit their beliefs are increasingly reflected in communal shrines, though no doubt their particular deities are still honoured in their homes.

As society develops further we see the start and spread of specialisation in metals, in ceramics, in textiles, in building materials and in many other aspects of life, all of which are of interest, but I

want to concentrate on the house and planning and integral with these two factors are the architects who bring their skills to bear on design, materials and construction. While we cannot identify architects in prehistoric times we do have the silent evidence uncovered by archaeology which speaks volumes for the skills they possessed. Probably these skills were acquired both by learning of existing methods and by resolving problems in satisfying the more detailed requirements of an ever increasing and demanding society. It is a matter of regret that we do not know these architects as it is almost certain that they were not only architects but also engineers in ensuring the supplies of water, drainage systems, defensive and road systems. One has only to consider the systems which were found at Mycenae on mainland Greece or at the Palace of Knossos on Crete as I discuss in Chapter 2. Each culture provided for its particular needs but it is a cumulative process and reaches its apogee with the Minoan and Mycenaean cultures.

With the collapse of the Mycenaean culture in or around the twelfth or eleventh centuries B.C. we enter the period known as the Dark Age where tradition has it that civilization had disintegrated and the skills of the Helladic Period were lost, and this signals a temporary end to significant progress. With recent archaeological discoveries this is a picture which is beginning to change as I illustrate in Chapter 3. Further movement is seen with the beginning of the Archaic Period in or around the seventh or sixth centuries B.C., with the increasing demands of the people stimulating progress, and its blossoming in the Classical Period in both planning and architecture which I discuss in Chapter 4. This all stems from the humble domestic building which reflects the family needs and priorities; in early examples the orientation of the house was important. Internally it was designed to meet their needs; they have their shrines but as the community expands and elites appear the house changes its appearance and size to indicate the importance and seniority of the occupant. The house becomes a social barometer.

The links between societies and civilizations are tenuous particularly in the prehistoric period where we rely on the archaeological remains. Those remains do show such links in planning the house, the LBK long-house and the Mycenaean megaron, the courtyards of **Çatal Hüyük** and the Minoan courtyards and in the planning of communities. I have adopted the same approach in considering Italy over the comparative period of 1400 - 500 B.C. and I have concentrated on the Terramare and the Etruscans and what influences they brought to bear on Rome. Those influences can be seen in both the temple and the atrium house as I illustrate in Chapter 6 and there is much evidence in both the archaeological remains and the extant writings

available to us. Care must be exercised in using as evidence the extant writings which are subject to error and bias.

The consensus of opinion among academics is that formal town-planning, as we understand it, commences with the introduction of the gridiron system in the 5th. century B.C. The gridiron system was an important development though as I argue in Chapters 4 and 5 I believe there were earlier attempts at formal planning of towns. My views do not necessarily accord with more generally accepted views that the gridiron system is a purely Greek or Hellenistic development and one which was adopted and adapted by Rome. I will advance arguments that there were more logical grounds existing for the development of the gridiron system rather than attributing the development to Greek ingenuity. This is not to deny the influence of Greek and Hellenic culture on the culture of Rome and Italy.

I have already referred to the anonymity of the architects of the prehistoric period. This is also true to a large extent of the historical period I cover where fine public and domestic buildings have been designed and constructed but in many cases we do not know who was the architect. We get a glimpse of what was then the architect's world at the end of the Republic through Vitruvius' *De Architectura*, an important treatise which gives us much valuable information. As it is the architect who creates the physical reality I have considered the treatise in some detail in Chapter 7 and what the architect contributes in the evolution not only of public buildings but of the house and planning.

I believe the home is the base from which all else develops but in formulating my arguments I am conscious that I must draw on prehistoric cultures extending over a considerable period of time which requires selectivity and a dependency on archaeology to provide the supporting evidence. This, in part, reflects the constraints imposed on this thesis and it can be said I am biased in my choice of evidence but the evidence I use does show the evolution of humankind. I must also acknowledge that much of the early evidence leads to speculation but, in my opinion, it is informed speculation based on the factual evidence uncovered.

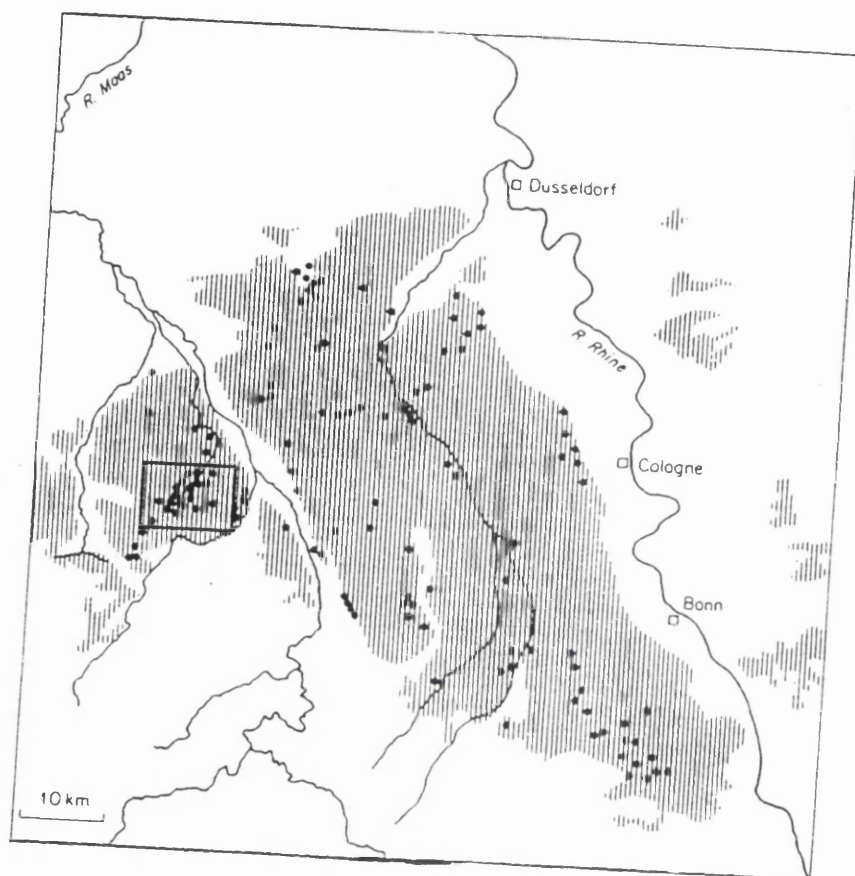


Figure 1: Linear Pottery sites between the Rhine and Maas rivers in Northwest Germany. Vertical hatching shows loess soils and the inset the Aldenhoven plateau (after Kuper et al, 1975).

Chapter 1

LBK Culture

It is at the changeover from Mesolithic to Neolithic culture that I consider the first evidence of practical planning can be observed. The change in culture from the Mesolithic to the Neolithic did not occur overnight, it was a gradual change and it is known that Hunter/Gatherer groups coexisted with the Neolithic agriculturists. ¹ There has been considerable debate on the causes of the change but this does not form part of this thesis. What is known is that the earliest agriculturists across Europe settled on land in valley bottoms and close to rivers which was readily tillable, rich in mineral content and identified as loess soil. ² (See Figure 1)

Loess is a wind-blown sediment, a yellowish dust of silt-sized particles, which was re-deposited on land newly glaciated or on sheltered areas during periods of relatively cold, dry climate from a periglacial steppe-like landscape. It has been found on about ten percent of the world's land surface, in Alaska, the Mississippi and Ohio valleys, in north-west and central Europe and particularly in China. ³

The Linearbandkeramik culture, or LBK, so-named because of the pottery found at sites, appears towards the end of the eighth millennium, about 7000 B.C., is one of the first and largest agricultural groups, or perhaps pastoralists may be more accurate, to be identified. They were, relatively speaking, a fast moving group taking about a thousand years to spread across central Europe and up into north-west Europe, as far as Holland. ⁴ Among a number of common factors was the location of their house or long-house close to rivers on the rich loess soil, though it is the case that later in the LBK period they were moving on to peripheral arable land. The unfortunate consequence of the richness of the soil is that because of intensive farming, particularly ploughing, the archaeological remains are negative features such as post holes, bedding trenches and rubbish pits, but a picture of sorts can be discerned from what remains there are.

One of the most distinctive common features was the linear layout of the long-house which was, in the largest version, a tripartite house. It was a rectangular structure with, at the north-west

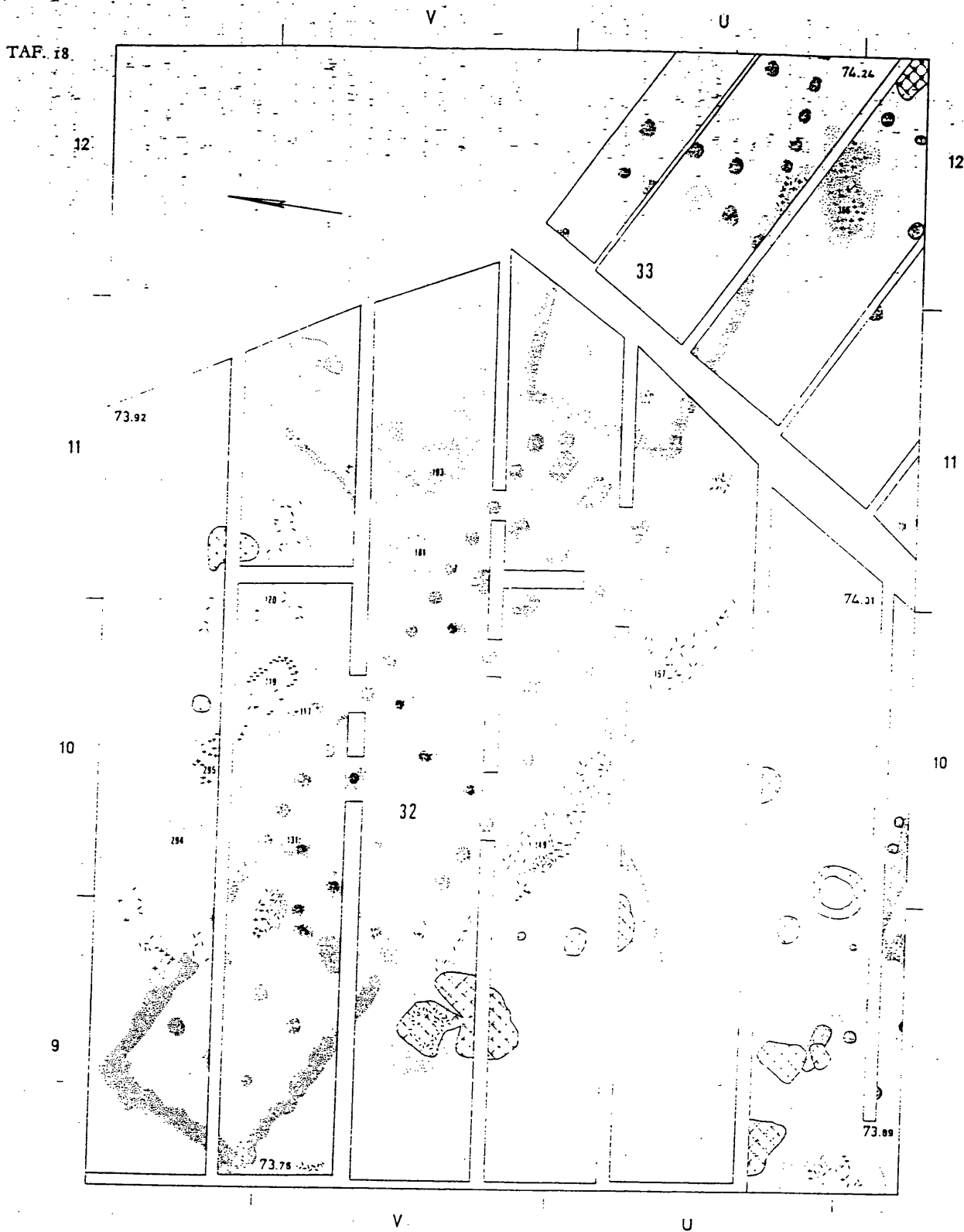


Figure 2: Elslöo. Gebäude 32 und 33. 1:200

end, a U shaped bedding trench, which extended approximately for about one-third of the structure, being enclosed with a solid timber wall, the remaining two-thirds of the walls were lined with posts and daub and wattle infill. Internally and longitudinally, there were three rows of timber posts with the centre row supporting the roof ridge pole but this arrangement was altered in what was the middle or centre section, which is called the Y section because the altered pattern of posts form a Y. The remaining one-third was, if I may use the term, a standard build though there is evidence in some structures of internal double posts suggesting possibly a mezzanine floor. There is evidence of smaller houses comprising the U and Y sections, the Y and south-east sections or the Y section on its own but , significantly, the Y section is always present, certainly in north-west Europe. What we do not know is where the entrance or entrances were nor if there was a hearth or hearths though traces of charcoal in the post holes of the Y section have been found and it can be assumed that the hearth was situated in this area. No rigid pattern in settlement size has been identified though some villages ranged from five houses in phase 1d at Elsloo, Holland, up to ten houses but there were also individual homesteads, for example, the Aldenhoven plateau in north-west Germany. ⁵ (See Figure 2)

One of the uncertain facts of the long-house is the number of occupants and it is argued that a floor area of say 50m² implies a small or nuclear family and for the larger long-houses the inference is an extended family plus their animals. ⁶ This argument is greatly debated in the field of research known as paleodemography ⁷ and is of some interest but what seems to be certain is that the long-house was occupied by the nuclear or extended family. A further common feature was the orientation of the long-house which, in general terms, was south-east to north-west, a feature which obtained across Europe. With the U section at the north-western end and the lack of evidence of access to the long-house there is a view that the U section was used as a stable for the animals but I consider this to be wrong in that the access would have to be either from the Y section or alternatively from the south-eastern end, which would have been a very messy business. The importance of the Y section is self-evident and I believe the Y section was the important domestic core of the long-house and given the unusual spatial arrangement in this section this could reflect some hierarchical disposition within the family unit. The U section seems more likely to be providing both sleeping quarters; I consider this section gives maximum shelter from the elements, and possibly where the family's deities were recognised and worshipped. With the Y arrangement in the middle section then the movement of people between both the Y and U sections would be capable of control and, of course, similarly

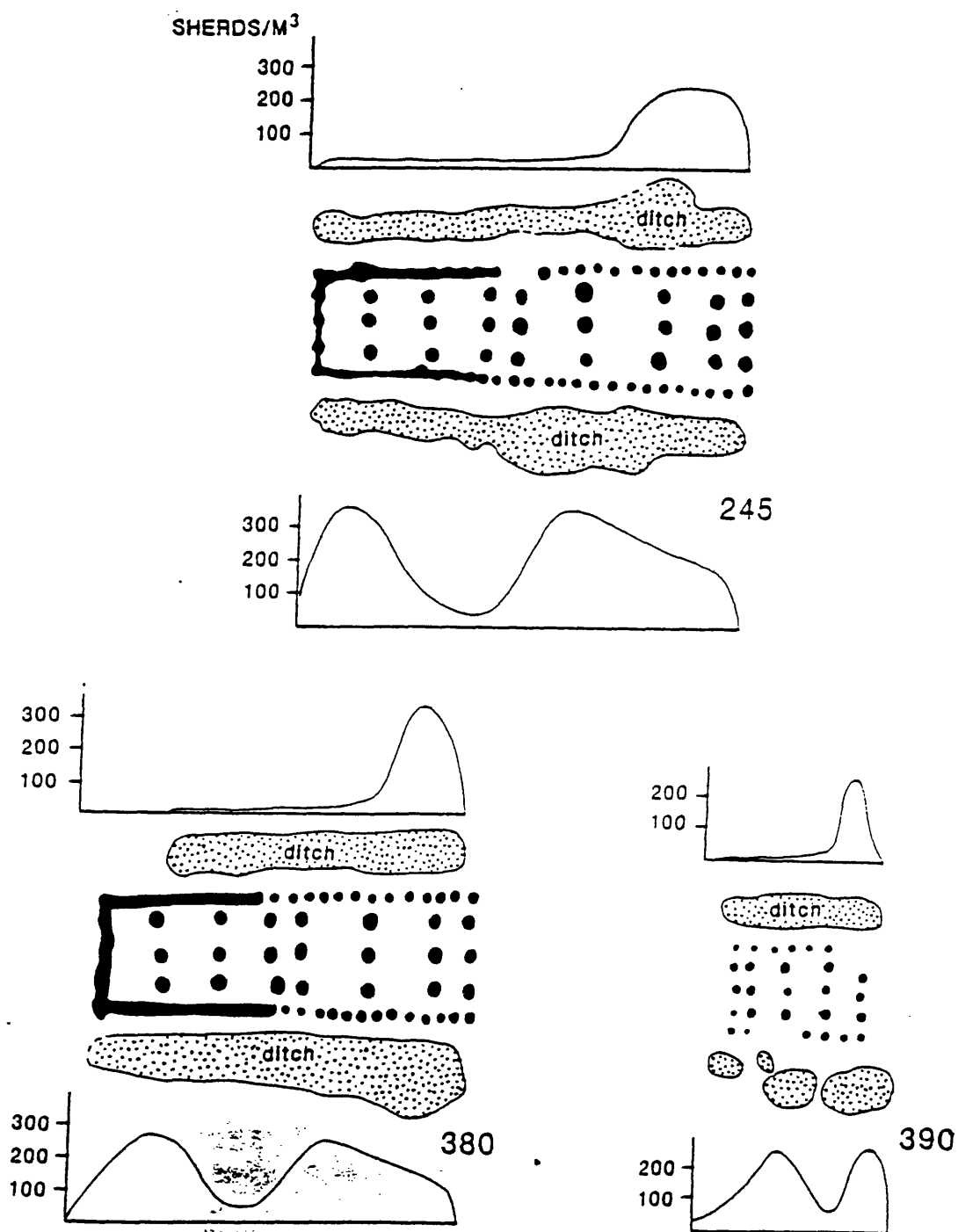


Figure 4: The volume of sherds along the ditches flanking late LBK houses at Cuiry-les-Chaudardes, Aisne valley. After Ilett et al 1982.



Figure 3: Elsoo. Gebäude 50, 51, 53 und 54. 1:200

between the Y and south-eastern sections. So far as the southern section is concerned I see this as the more logical area for housing animals with the post arrangement allowing a rudimentary stall layout. If there was a mezzanine floor over this area, and this does seem likely, then such an area could provide not only storage space but also additional sleeping space if this was required. I concede that these are assumptions on my part but they are assumptions based on the evidence of a logical and planned interior and perhaps supported by some evidence that the interiors of the houses were kept relatively clean. ⁸ (See Figure 3)

Another conundrum is the external pits on either side of the long-house which, having fulfilled their primary role of providing mud for the side walls, are then used as rubbish pits but it is the deposition of rubbish which poses the problem. Looking north-west a consistent use of the pits on the left-hand (or west) side is made and lots of pottery shards are found at the southern end then there is a falling off of depositions and then a rise in depositions at the northern end. Unfortunately, not enough detailed analysis has yet been done of the pottery shards, that is, what type, a bowl, vase, jug, cup, etc., whether randomly deposited or deposited by type, but what is known may suggest a belief or faith significance here which may relate to the dominant Y section. (See Figure 4)

While the LBK culture has been identified and its movement traced across Europe there are many questions as yet unanswered but from what archaeological and architectural evidence there is some parts of the puzzle are known. It seems clear that long-houses in settlements were never built close together; distances between long-houses could vary from as little as forty metres up to around one hundred metres. This may reflect the territorial rights of each long-house, though boundary or enclosure ditches or banks have not been found. Settlements have also varied in the number of houses ranging in five in phase 1d at Elsloo up to ten. ⁹ There are clear variations in size but a long-house could extend to forty-five metres with widths ranging from five to eight metres, no doubt reflecting the size of the occupying family and possibly their stock of domesticated animals. I have already mentioned there is some evidence to suggest internal cleaning but we also have the American archaeologist Peter Bogucki showing that in the early LBK milk culture of temperate Europe the age and sex structure of the cattle together with the ceramic strainers (interpreted as cheese sieves) indicate the presence of dairying as early as 5400 B.C. ¹⁰ (See Figure 5)

While they are labelled the LBK culture, a typological designation which enables us to identify them, it does not provide us with an explanation of their society or their culture. The culture shows a wide uniformity ¹¹, some signs of an ordered society can be detected such as the general orientation of the long-house, the linear structure of the long-house, the spatial differences between long-houses, the tripartite arrangement of the long-house, the apparent dominance of the Y section and the order of deposition of rubbish, all indicate a society based on the family unit. They are both agriculturists and pastoralists, and the long-house is the centre of their world with the Y section possibly reflecting a hierarchical order within the family unit. The architectural design of the long-house suggests, as I have said, not only a practical approach to the requirements of their daily lives but also a belief or faith significance. While these are all logical hypotheses from the evidence available it is not possible to detect their perceptions of the world as they saw it, their beliefs, the structure of the family unit or the larger communal society but what seems beyond doubt is the long-house is the core of their world. It is argued that social constraints included an absence of social hierarchy within a community and an egalitarian socio-political organisation ¹² and given what evidence there is I do not disagree with this hypothesis. There is also advanced the idea that houses are not just machines for living in as architects once misguidedly asserted but part of the social system itself. ¹³ It is my contention that the house is the base, the core of the family unit which itself is fundamental to the society that must develop as agriculture forges a new future for humankind.

Çatal Hüyük

Looking eastwards to south-west Asia, in the period following almost immediately after the LBK culture came to an end, I want to examine the site of Çatal Hüyük in the Near East. It lies some eleven kilometres north of Cumra in the alluvial plain of Konya in western Turkey. There are a number of sites which could be examined such as Beidha but Çatal Hüyük is the most spectacular with many interesting features. The first permitted excavation of this site was carried out by James Mellaart, commencing in 1961 and finishing in 1963. There are two Hüyüks at Çatal Hüyük, one on either side of an old river bed, and Mellaart excavated both Hüyüks covering an area of almost one acre. ¹⁴ This represents a one thirty-second part of the total site area of thirty-two acres but the material found shows the high degree of sophistication achieved in the Neolithic culture of the Near East.

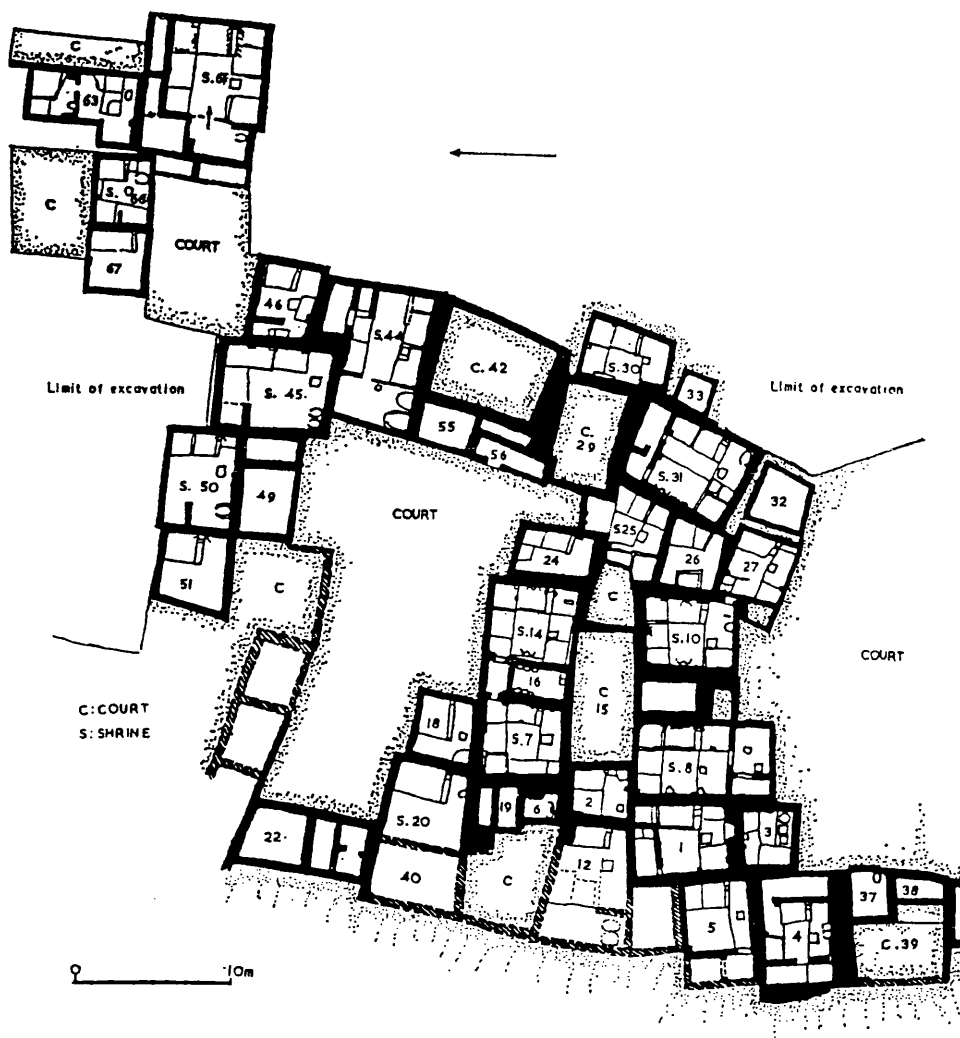


Figure 6: Çatal Hüyük. Plan of building level VIA

In the area excavated fourteen building levels have been identified in the main mound (the eastern Hüyük), with a height of about 17.5 metres above the present level of the plain, a small sounding has established that occupation extends to a minimum of four metres below the lowest level so far excavated. ¹⁵

The radiocarbon dates for Çatal Hüyük east are between 6500 and 5700 B.C. and after the east Hüyük was abandoned, the reason unknown, Çatal Hüyük west was founded and lasted for another seven hundred years until it was then abandoned without any obvious signs of violence or deliberate destruction. ¹⁶

While Çatal Hüyük was not a city but a large town the material finds show the diversity of activity within the community but a community with an essentially agricultural economy as its base. Carbonised remains of emmer, einkorn, wheat, barley, peas, vetch and bitter vetch have been found while domesticated animals included sheep, ox, and the dog. Also found were the earliest examples of textiles so far known. They appear to have been made from animal fibres but did not have a pattern of any kind. The earliest examples of metalworking included beads and other small ornaments in both copper and lead found as far down as Level 1X. Pottery, of dark burnished ware, was found at Level X11 and it develops throughout the succeeding levels without a break in continuity. There were wall paintings in Levels X - 11 and these are, in terms of our present knowledge, the oldest wall paintings in the world. It also seems the community were involved in trade, particularly obsidian. ¹⁷

But it is the architecture of the house, and therefore of the Tell, on which I will concentrate. There is an interesting feature as the excavation shows there were no streets, alleyways or doors; entry to the house is from the roof by way of a ladder. The external appearance would have presented blank walls to people approaching the Tell; this may have been a defensive measure for the whole community as other settlements in the region at this period had defensive features such as ditches, walls and towers but it is an interesting and innovative architectural approach. The houses were of individual construction, that is, each house had its own walls and roof and the roof levels would have been staggered to admit light. (See Figure 6)

All the houses were of rectangular plan with about 25 square metres of floor space and comprised a large living-room and a smaller storeroom. The storeroom was entered from a low

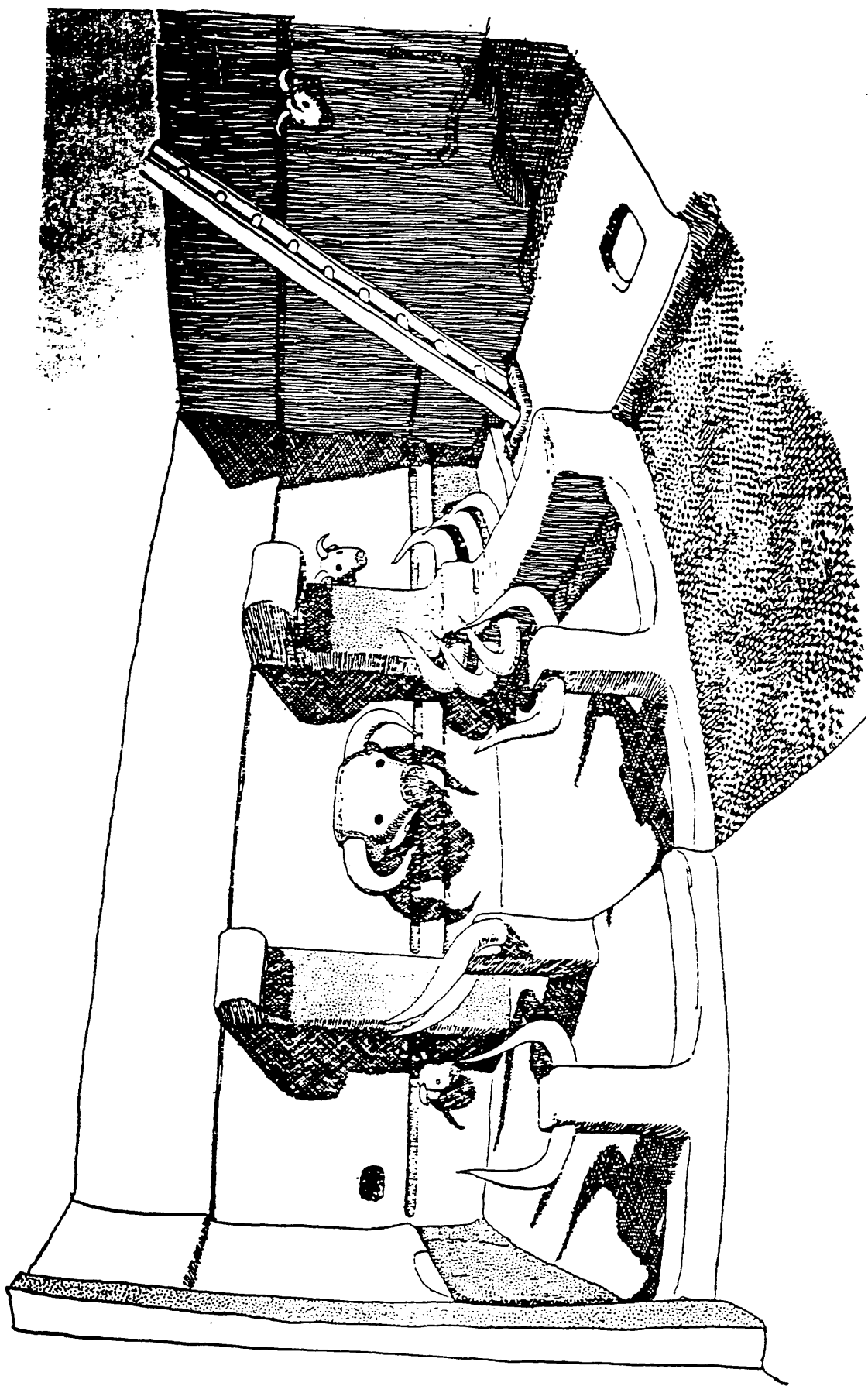


Figure 8: Çatal Hüyük: Restoration of the east and south walls of shrine VI.14 with bucrania, horn cores on a bench and bulls' heads modelled in relief. A ladder, the normal means of entry, is on the right.

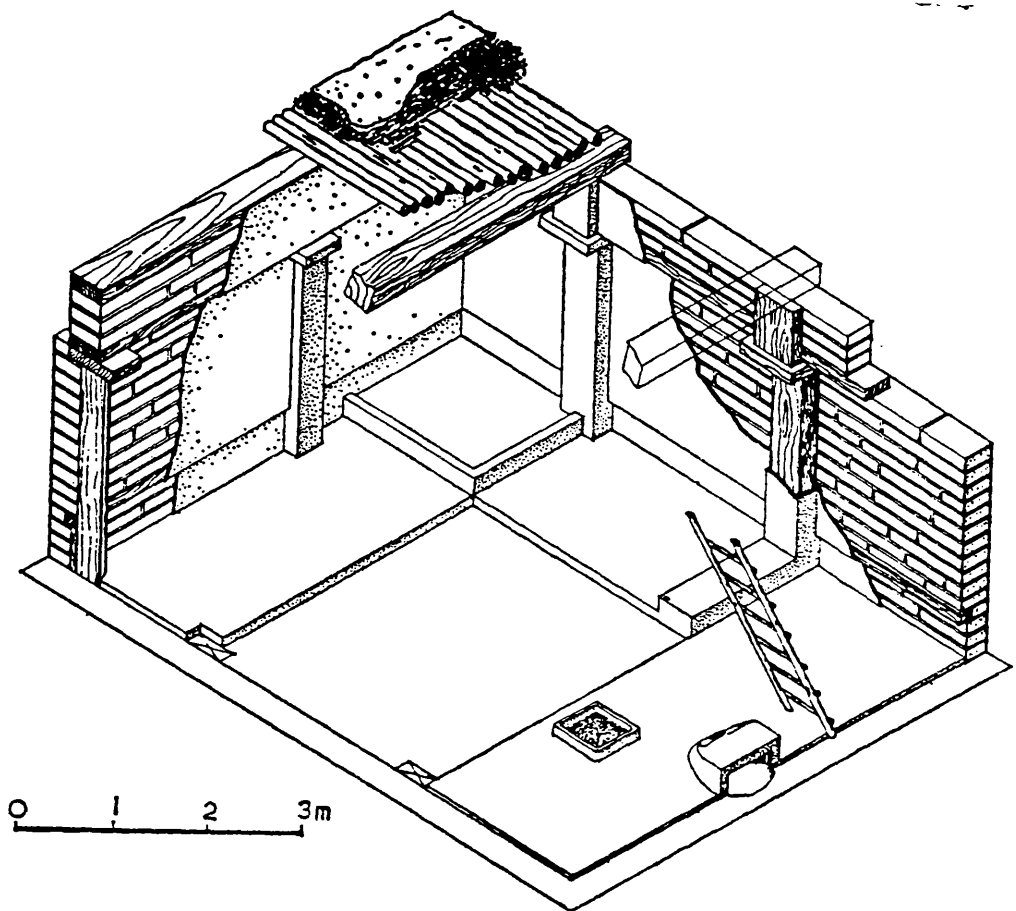


Figure 7: The Architecture of Çatal Hüyük
*Diagrammatic view of a typical main room at Çatal Hüyük showing timber frame-
work, panelling and platforms, bench, hearth, oven and ladder.*

doorway, you would have to crouch to get in, and access to each house was from the roof by way of a wooden ladder fixed against the south wall. The ladder deposited you in what was the kitchen area where the hearth was located together with a flat-domed oven and fuel cupboard. The remainder of the space was laid out in a standard fashion with a platform in the north-east corner, adjacent and running along the east wall a lower platform and at the same height a further platform running along the north wall. The remaining area, between the north platform and the kitchen at the south end was at the same level as the kitchen but delineated from it. ¹⁸ (See Figure 7) Shrines are identified by their decoration , associated finds and burials but are not larger in size or structurally different from the houses. The houses and shrines are timber-framed structures infilled with sun-dried rectangular mud-bricks, reeds and plaster. Painting was widely practised but another form of decoration, found both in houses and shrines, was bucrania though it is the shrines which were most heavily decorated. ¹⁹ One other feature which should be noted is the inclusion of courtyards within the Tell at various levels. What we do not know is the nature of the use of these courtyards, whether it was for assembly or recreation or perhaps a more practical use but possibly further excavation may throw light on this particular problem.

As Mellaart reports, there was an orderliness and planning prevailing everywhere and this is seen in the size of the houses and shrines where the most common types range from 25 to 27 square metres though there were variations reflecting the needs of the family unit. ²⁰ This view is not shared by everyone and cited are such natural processes as the polyps in a coral reef or the worker bees in a beehive. ²¹ While I note the point being made I do think, on the evidence we have from such a small part of the site, that the virtually standard size of the houses and shrines, the standard layout of the interior and the specific decoration of the shrines does support the concept of planning. The decoration of the shrines is incredible, it does differ over the various levels of occupation and is absent at the lowest levels; the earliest shrine found was at Level X. Other forms of decoration, which varied over the different levels, included bucrania and horn cores set in a bench, plaster reliefs of a twin goddess, a bull's head, a plaster relief of a woman in the position of giving birth, plaster reliefs of female breasts together with wall paintings which Mellaart divides into six groups. There were naturalistic paintings of goddesses, human figures, bulls, birds, vultures, leopards and deer, another group has representations of landscape and architecture; these are only two of the groups he describes ²². (See Figure 8)

The treatment of their dead is unusual in that the dead were exposed to the elements, probably taken to a mortuary outside the Tell and presumably exposed on platforms and when the corpses were cleaned down to the bone then secondary burial occurred in the houses and shrines. The burials in the houses seem to indicate that they were still part of the family but the burials in the shrines possibly indicate a difference in status. It is clear that burials in shrines were accompanied by precious objects whereas the great majority buried in the houses did not have any gifts.²³ Mellaart is of the opinion that his excavation has revealed only the religious quarter of the town²⁴ but this must remain an opinion until further excavation is carried out.

The foregoing only touches briefly on many of the finds, and then not all, of a town which was the base of one of the earliest Neolithic agricultural cultures and while there are many aspects worthy of debate I want to focus on the architecture and the people who occupied that architecture. In considering the LBK culture and its long-house the scanty evidence limits us in our conclusions but there is no doubt that the architecture and its tripartite style clearly indicates a logical use of the space; it is a planned structure. I believe Çatal Hüyük is a more sophisticated expression of both the architectural style of the house of the family unit and that it is also an integral part of their belief. While I would not strongly argue against Mellaart's belief that he has excavated only the religious quarter, a belief based on the number of shrines identified related to the number of houses identified, I find it significant that both the house and the shrine are identical in orientation, layout and construction. While the shrine may be only used on specific occasions the family unit is living in its reflection. It is an integral part of their daily lives, with the burial of family members within the house they maintain contact with their own ancestors: it is the complete extended family.

It is true that Çatal Hüyük is not a city, it does not have an urban structure²⁵ yet the architecture reflects a society where the family unit is clearly very important but on the evidence presently available there is nothing to suggest some form of hierarchy though there may be priests to officiate in the shrines. Given that the architectural dimensions and style are virtually the same it could be argued this was an indication of an egalitarian society. It differs from the LBK long-house in that the shrine is now separate from the house, perhaps indicating what must have been a more complex society, though some houses were found to have bucrania, and where their belief is being expressed in a more communal manner. In my opinion what Çatal Hüyük shows, among other features, is a planned environment which accommodates not only the individual

family unit but also their belief. That planning and those beliefs extend over most of the levels of construction and occupation so far uncovered.

Chapter 2

The Early Civilizations : c2600 - 1200 B.C.

The profession of archaeology continues to provide much evidence to our understanding of the past, both historical and pre-historical, so that it is somewhat ironic that our knowledge of the Bronze Age in both the Aegean and the Greek mainland was initially provided by the efforts of two amateur but knowledgeable archaeologists. The first discovery was by the German banker Heinrich Schliemann (1822-1890) driven by his belief that Homer's *Iliad* was a true account of the events at Troy and in 1870 he identified the site of Troy. ¹ Still on the theme of the *Iliad* as a form of history and no doubt encouraged by Pausanias' description of the Gate with Lions and the Treasure House of Atreus, ² he excavated within the walls of Mycenae in 1876, in particular, a circular area surrounded by a double row of huge slabs. He found five shaft graves and discovered the greatest treasure ever on mainland Greece; that he incorrectly claimed to have found Agamemnon's grave is irrelevant; his claim that he had found a great civilization, a new world for archaeologists and historians, was correct. ³

The second discovery was by Sir Arthur Evans (1851-1941) who in 1899 started excavation on the island of Crete at Knossos and first revealed the great Palace of Knossos. He soon determined that the Minoan civilization as he called it, after the name of Minos of Knossos, the sea-king famous in Greek legend, ⁴ preceded the Mycenaean civilization though he demonstrated that there were contacts between these great civilizations and that the Mycenaeans absorbed many of the Minoan techniques in pottery, art and metalwork in their own products.

What is clear from the information we have accumulated is that, among many other aspects of community life which have changed, the apparently egalitarian principles of the Neolithic peoples of the LBK and Çatal Hüyük have disappeared and now we have an elite, a ruling class, certainly monarchical according to legend and now proven archaeologically as I will show. This is seen in the house which while it may still be the world for the occupants is now subservient to the Palace, home of the ruling family. While planning may still be for the common good it now extends into administration, the economy, the road infrastructure and there is a form of town planning in the towns and settlements around the palaces. These changes are interesting in that the now accepted major palaces in both civilizations, Mycenae on mainland Greece and Knossos

on Crete, both overlies earlier Neolithic sites but the values of the Neolithic peoples have vanished.

Before considering these ancient civilizations in a little detail it is worth looking at our earliest historical sources to see what light they may shed on these civilizations and I must say I am disappointed with the results. Herodotus makes no mention of a Minoan culture, he refers briefly to Crete which in ancient times was occupied by entirely non-Greek peoples ⁵ and there is a passing reference to Minos of Knossos who may possibly have ruled the sea at a still earlier date.

⁶ As for Mycenae, it gets two mentions, the first being the 80 Mycenaean infantry at Thermopylae ⁷ and the second mention is again advising on the number of Mycenaean infantry, a total of 400, at the battle of Plataea, ⁸ both events occurring in 480-479 B.C. Thucydides is really not much better; he has a somewhat jaundiced view of the Hellenic states, weak in themselves and lacking in communications prior to the Trojan expedition; ⁹ he describes Mycenae as a small place and many of the towns of that period not particularly imposing. ¹⁰ He mentions Crete only in respect of its contribution to the Peloponnesian war though he refers to Minos who, according to tradition, was the first person to organise a navy and controlled the greater part of the Hellenic sea (the Aegean). ¹¹

Though I am aware that great caution must be exercised in assessing the comments of these early historians I find it strange that they both seem to be concerned with the logistics of war but no mention is made of the sphere of influence and the trading power of either civilization. Perhaps such subjects are not the stuff of oral history and were lost in the Dark Age.

The Minoan Civilization

There can be no doubt that the discovery by Sir Arthur Evans of the great Palace of Knossos gave fresh impetus and brought a more scientific approach by archaeologists already inspired by Heinrich Schliemann's discoveries though his method of excavation, by today's standards, was considered to be very rough and possibly destroying more than was discovered. ¹² That our knowledge of this ancient civilization is greater today than when Sir Arthur Evans made his discovery of the 'Palace of Minos' is not in doubt and archaeology is the main source of this knowledge. We can precede Knossos and understand better the development of this early civilization by looking at Early Minoan settlements. The village settlement of Myrtos at Fournou

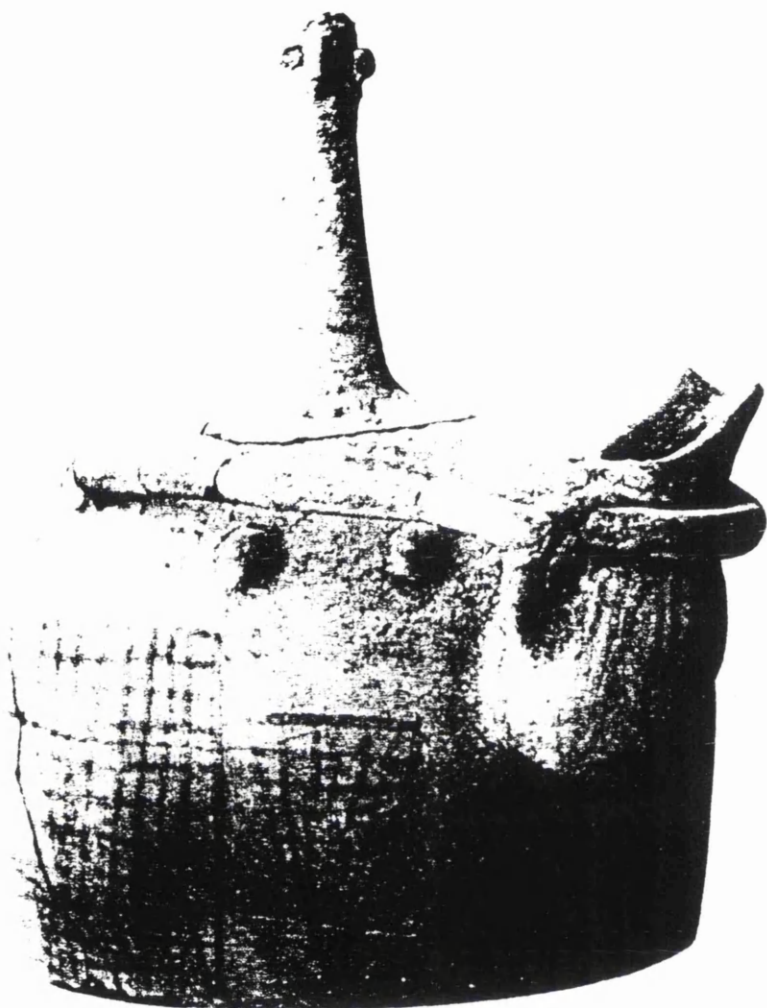


Figure 10: The Goddess of Myrtos, 21.1 centimetres in height. She is painted with hatched panels which must represent dress. She has a non-human, stalk neck and holds in the crook of her arm a miniature jug painted in the commonest Myrtos style.



Figure 9: Myrtos. A schematic plan of the site.

Korifi, a hilltop east of modern day Myrtos on the coast, which was totally excavated in 1967/68, is such an early settlement. Excavation has revealed a building complex of nearly one hundred rooms, linking passages and open areas on a site of approximately 1250m² and described as a single, large, cellular unit crowning the summit of the hill. The composition of the settlement is of great interest; there were living rooms, kitchens, store rooms and workrooms together with a shrine room which had a small stone altar set against the wall and open areas. (See Figure 9)

There were two phases of settlement, the first period of occupation c2600-2400 B.C., followed by expansion when new rooms were added in all directions linked by passages. Its final destruction by fire was about 2200 B.C. when it was abandoned. While agriculture was the core of the economy with wine and oil being produced and cereals grown there was also wool spun and woven, while animals reared included goats, sheep, pigs and cattle. Pottery was produced in quantity; from the artefacts recovered over seven hundred pottery vessels are seen to be in use; there were one or two copper tools and a variety of stone tools serving the agricultural, industrial and household activities. ¹³ What is of interest to me is that here is a settlement which appears to continue the egalitarian principles which I referred to as possibly obtaining in Çatal Hüyük and the similarity might be continued by its single, cellular unit description not unlike Çatal Hüyük but entered normally through doors as opposed to hatches in the roof. Another view is expressed when comparing the many interconnected small rooms in the palace of Phaistos with the Early Minoan settlement plans. ¹⁴ In the shrine room and close to the altar was found a strange female figurine in terracotta which has been called the Goddess of Myrtos indicating that a female divinity was worshipped with a household cult. ¹⁵ (See Figure 10)

The shrine room is separate from the living rooms; it is located in the south-west corner of the complex, and as such repeats the pattern we observed at Çatal Hüyük, that is, it is a communal form of worship, an indication of a more complex society and there is a public expression of their beliefs.

The main focus of attention is the Palace of Knossos but it was not the only palace and what we see today was not the first palace on the site, the 'Palace of Minos' as named by Evans. The original palace, in what is known as the First Palace Period on Crete, was also a substantial complex and the archaeological evidence shows it was a large group of buildings constructed around a central courtyard and linked together. There were many small interconnected rooms

and one argument advanced is that the complex was originally a series of separate buildings placed around the central court ¹⁶ forerunners of the large individual houses which appear in Middle Minoan 1. There was an elaborate drainage system of terracotta pipes running everywhere throughout the palace - it was brilliantly engineered - and on the south side of the complex was a great viaduct and an approach road to the palace. ¹⁷ The first Cretan palaces were built around 1930 B.C. and they represent a tremendous advance in both architectural and engineering techniques when compared to the Early Minoan settlements and while I do not disagree with the earlier comparison of the interconnected rooms of the first Palace of Phaistos with the settlement of Myrtos I consider the hypothesis that the plan of these first palaces was based on knowledge of contemporary palaces at Beycesultan in Anatolia and Mari on the Euphrates more likely. ¹⁸ Outside the palace there was the town of Knossos and there is evidence of a further new development, the individual villa or mansion depicted in coloured plaques found in the palace, one a faience cut-out relief, one of the Town Mosaics and a similar ivory plaque. They show houses of two or three storeys built in clay bricks with timber tie beams, ¹⁹ but these, of course, give no indication of the layout of the houses. Sir Arthur Evans comments that the prevailing type of Cretan houses, as far back as Neolithic times, presented a rectangular plan. ²⁰ He cites the 'House of the Fallen Blocks' and the adjoining 'House of the Sacrificed Oxen' as the best examples of the ordinary town houses of Knossos and what he has called 'tower houses'. ²¹ He further asserts that in the Middle Period the Minoan private houses were in other respects advanced far beyond the primitive stage. ²² I believe these were the homes of the more affluent members of that society such as court officials, administrators and master craftsmen.

Sir Arthur Evans advises that little chapels existed in the private houses as well as the Palace Sanctuaries, and at times there is evidence in these, too, of small lustral areas for purificatory rites. ²³ A shrine room has been found in the first Palace of Phaistos just inside the west wall of the palace. It had benches around the walls and set in the floor was a large clay offering table and a triton shell, known to be blown as a ritual trumpet. ²⁴ Given the figurine found at Myrtos it might be argued that religion was monotheistic with a female deity but there is insufficient evidence to reach such a conclusion though it does seem that communal worship is not the norm; the shrine at Phaistos measures only 3.62 by 2.57 metres, too small, perhaps, even for the members of the occupying family.

The first palaces were destroyed around 1730-1700 B.C. and while the probable cause was an earthquake, there is no evidence of violence; we cannot be certain.

The great Palace of Knossos was the successor of the 'Palace of Minos' being rebuilt over its remains and it is the ruins of this great palace which we see today.²⁵ In the rebuilding it was greatly modified and it might be argued that society was imposing its own requirements from the complexity arising from its own growth and evolution. Whatever the reasons it becomes a more efficient society and there is an economic pattern discernible in the evidence we have though it is still an agriculturally based society. It is a monarchical society and it embraces many skills working in metals and stone while not rejecting traditional skills in producing oil, wine, cereals, wool and leather, but metallurgy is the most important, producing its wealth. There is clear evidence of trading across a wide area, both east and west, and also with mainland Greece where, as we will see, they have a great influence on the growing Mycenaean culture.

The remodelled Palace of Knossos had several architectural features of note such as the Corridor of Processions, the South Propylaeum, which D. S. Robertson describes as "a remarkable forerunner of the classical Greek type of propylaeum",²⁶ and the Throne Room which contained a throne made from alabaster stone and had paintings along each wall. The throne room and the anteroom as we see them today seem to have been built in the final Mycenaean period of occupation after 1450 B.C.²⁷ Apart from the ceremonial areas there were administrative, domestic, industrial and storage areas. There is abundant evidence that the Palace was the focal point of the region gathering in and storing the agricultural produce of the region and redistributing as was appropriate. Writing makes an appearance and Lord William Taylour gives credit to Sir Arthur Evans as a pioneer in researching the development of script from the first stage of hieroglyphic signs, found mainly on Cretan gems and seal-stones, from the first half of the millennium to the second stage which Sir Arthur Evans called Linear A. This was found inscribed on tablets, vases, stone and bronze. It is probable that Linear A overlaps hieroglyphic script and Lord William Taylour suggests it may have started as early as the 18th century B.C. and it was widely used in the Second Palace Period. Linear B, closely related to Linear A, followed at a later date.²⁸

Religion was a dominant element in Minoan life as evidenced by the many relevant artefacts. In the Palace of Knossos there were a number of ground floor rooms for cult and religious

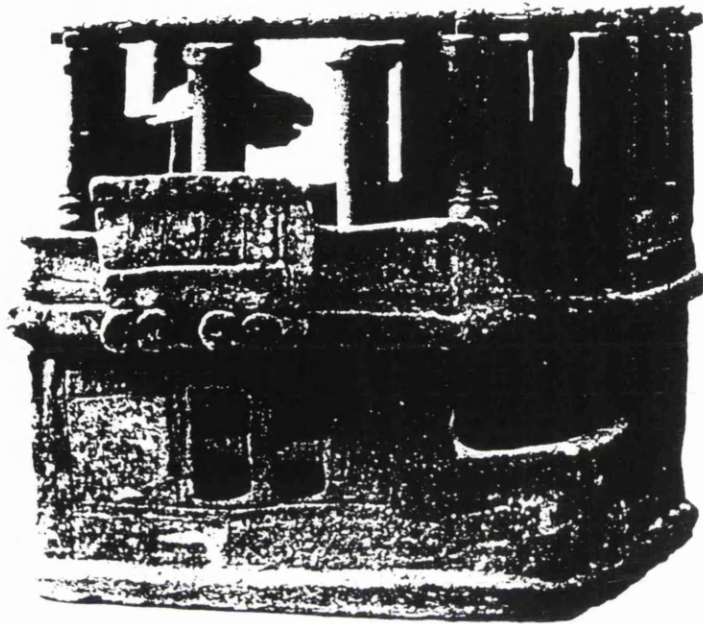


Figure 12: A terracotta house model found at Arkhanes. It gives a marvellous idea of what a Minoan villa looked like in full elevation. Note the balcony in front resting on rounded beam ends. A staircase leads to the upper floor with its columned roof. Ht 23.5cm.

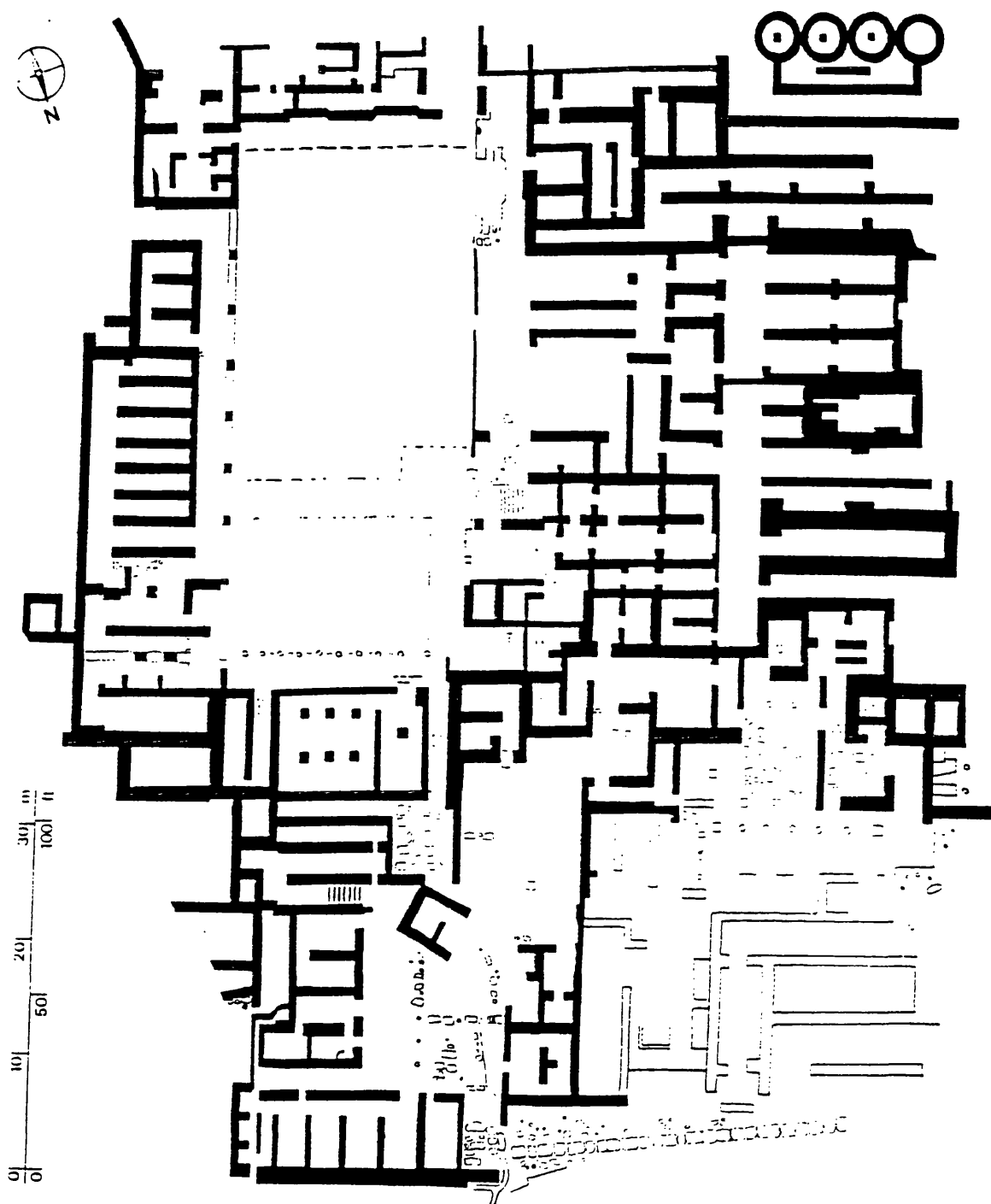


Figure 11: A plan of the Palace of Mallia

activities, there were stone-built sanctuaries on mountain summits, some caves were clearly sacred places such as the Diktaian cave above Lasithi and those of Eileithyia at Amnisos and Skoteino and rural shrines as at Rousses near Khondhros, a self-contained building with several rooms.²⁹

The palace at Phaistos was rebuilt as were smaller palaces at Mallia and Zakro but the Palace of Knossos was the largest, occupying some 19000 square metres and it may well be it was the dominant palace on the island. (See Figure 11)

One contentious view advanced is that the Palace of Knossos was one building with a long history, that there was not a First Palace and then a Second Palace.³⁰ A second point of debate is that the palace was not built originally as individual blocks but that it was planned as a single building and the various stages of construction necessitated an initial programme of individual blocks which are to be subsequently linked.³¹ I have some sympathy for both views; in the first argument if you are rebuilding but adapting and using the ruins of the original building then, technically, can you call it a new building if it incorporates parts of the old building ? My conclusion is that the second Palace of Knossos is a new building, it incorporates new features and is in many respects a well organised building, one that is very different from the first 'Palace of Minos'. As for the second argument it may well be that the sheer size of the proposed palace determined its construction in phases but this implies a level of sophistication has been reached in forward planning which is not supported by any evidence. On the contrary the building of individual blocks, their subsequent linking and extension, could be evidence of a growing economy and the Palace growth keeping pace.

While I have concentrated on the palaces there were Minoan towns and villages, mainly on or near the coastline, where there is good agricultural land and easy sea routes, such as Palaikastro and Pseira and further settlements inland where the pattern seems to be an important building of some type, perhaps the house of the local overlord, on the summit of a hill with smaller buildings on the lower slopes like Gournia and Myrtos Pyrgos.³² There are also country mansions which are a feature of the Second Palace Period, houses which are architecturally similar to the large houses which were found around the palaces. (See Figure 12)

Some great disaster ended the Minoan civilization around the end of the 16th century and the beginning of the fifteenth century B.C., but what that disaster was is unknown to us but the nature of the disaster has been hotly debated. There are those who attribute this to a Mycenaean invasion but this argument makes little sense in that you do not destroy everything, as happened on Crete, when it is the wealth and creativity which attracts you in the first instance. Another aspect is that the archaeological evidence does not disclose any discernible signs of violence of a man-made nature. I tend to agree with those who relate the disaster to the Santorini volcano which exploded and buried Thera though, yet again, what evidence there is cannot be considered strong enough to substantiate the cause as natural forces at work. Yet consideration of the geological information now available to us does seem to provide a more logical hypothesis for the destruction than the 'man-made violence' hypothesis.

Briefly, Crete is part of the Hellenic arc which formed in response to the subduction of the African plate beneath the Aegean, that is, where the opposing plate is oceanic and dives underneath the adjacent plate the magmatic activity will produce a chain of islands, usually in the form of an arc, and while not fully typical, explains the volcanic islands of the Aegean. Buckling of the crust in front of the volcanic arc may produce a chain of non-volcanic islands such as Crete and Rhodes, to name but two. Plates may also slide past one another along major faults that can cross both oceans and continents; in the Aegean region the North Anatolian fault zone is of this type: the European continent is moving to the right in relation to the Anatolian plate.³³ The Santorini eruption occurred between 1650 and 1500 B.C., but the date is the subject of considerable debate with many archaeologists favouring 1500 B.C., based largely on the styles of pottery and others artefacts found at Akrotiri, while geologists favour 1650 B.C., based on carbon 14 dating of vegetation killed shortly before or by the eruption.³⁴ Volcanic ash, presumably from the Santorini eruption, has been found on Crete, but not in well defined layers; thus it is impossible to correlate these ash falls with the archaeological data. However, archaeomagnetic dating of mud walls fired during the burning of the palaces and of the volcanic ash from the eruption suggests that this destruction was synchronous with the eruption. Yet another option is that these destructions may not have been directly related to the effects of the Santorini eruption, but only to the earthquakes and tsunamis that commonly precede and accompany major eruptions. That the Santorini eruption was accompanied by a major tsunamis is almost certain and it has been calculated that a maximum wave height of 12 metres could have hit the north coast of Crete.³⁵

Whatever the nature of the disaster the destruction at the Palace of Knossos could not have been total as we know there was a Mycenaean period of occupation sometime after 1450 B.C.; I have already referred to the fact that there is evidence that the throne-room and anteroom, as we see them today, seem to have been built in this period.

We can infer that this was a great civilization from the evidence of the palaces, towns and villages which illustrate the architectural and engineering techniques they had evolved. The artefacts show the Minoans were master craftsmen, their wall paintings and frescoes are of excellent quality, their administrative abilities are well attested, though we have not yet deciphered the language of the Linear A tablets. Their religion does seem to be a prominent feature of their lives and there can be little doubt that their society was monarchical yet perhaps the most remarkable feature is the absence of any signs of violence, apart from natural causes, in this society. While the emphasis has moved, in egalitarian terms, to an elite with their palaces and grand houses, the general populace seem to be content with their planned and organised economy and their domestic shrines continue to express their beliefs.

The Mycenaean Civilization

While the Minoan civilization was growing in wealth and influence in the Second Palace Period, on mainland Greece another great civilization was arising and in the early part of the sixteenth century B.C. there is increasing evidence of the civilizing influence of Crete on this culture and what is termed the Mycenaean Age may then be said to have begun.³⁶ As with Sir Arthur Evans' discovery of the 'Palace of Minos' on Crete and the continuing archaeological interest in the island so too with Heinrich Schliemann's discovery of the shaft graves and the rich treasure they produced in the Citadel of Mycenae together with his claim to have found Agamemnon's tomb, there has been a continuing interest in this great civilization. Today we know of other Mycenaean kingdoms such as Thebes and Orchomenos in Boeotia, Iolkos in Thessaly, Athens in Attica, Pylos ruling Messenia, perhaps the most important find following Mycenae and known as the Palace of Nestor.³⁷ Professor Blegen, who excavated the site at Ano Englianos in 1939, found 618 pieces of clay tablets, in what came to be known as the 'Archives Room' and he recognised the script which had been classified as Linear B by Sir Arthur Evans; it was the first

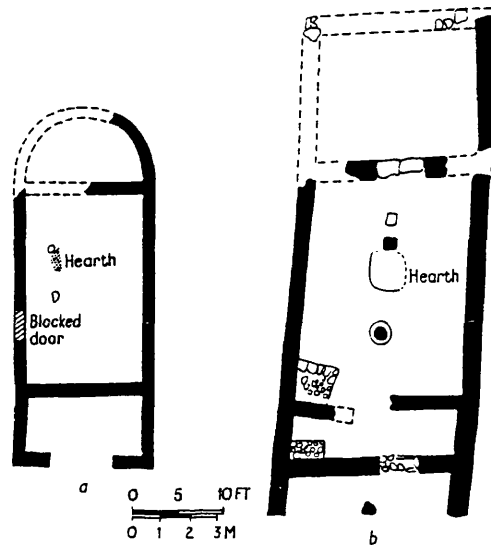


Figure 14: House plans at Korakou
a - Middle Helladic; b - Late Helladic

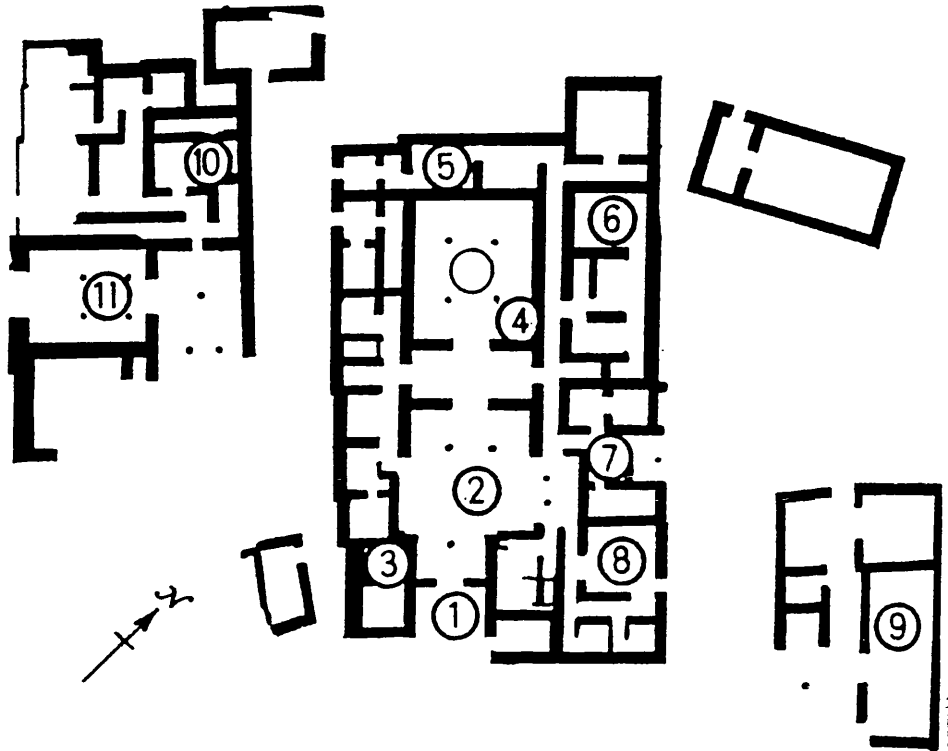


Figure 13: Plan of the Palace of Nestor at Pylos.

- 1: Propylon; 2: Stoa and Aithousa; 3: Archive Room;
 4: Megaron (Throne Room); 5: Store Rooms for Oil etc;
 6: Room 48 (some tablets here); 7: Room 47 (some tablets);
 8: Queen's Megaron; 9: Workshop (some tablets);
 10: Room 32 of Older Palace (some tablets); 11: Throne Room of earlier palace

such discovery of written documents in a mainland site of Mycenaean Greece.³⁸ (See Figure 13)

What must be noted is that the plan of a Mycenaean palace differs greatly from the Minoan palace in its basic layout. Lord William Taylour provides a good description of the nucleus of a Mycenaean palace being derived from a Middle Helladic model of uncomplicated design : a long room, preceded by a vestibule on its short side. In front of the vestibule there was no doubt a porch of primitive construction such as is found with many village houses in Greece today, that is, a trellis framework supported on two posts. In the Mycenaean palace these features took the form of a columned porch, leading into a vestibule and thence into a main room or megaron as it is called. Frequently the house had another room at the back which was used as a storeroom and had its own separate entrance, a feature reproduced in Nestor's Palace at Pylos. A fixed hearth is usually found in the living rooms of MH and LH houses; in the Mycenaean palace it was of great size and occupied the central part of the megaron. Around the circular hearth were four round column bases of stone which supported tall wooden columns of great height and strength, sufficient to raise the central part of the roof and thereby create a clerestory.³⁹ (See Figure 14)

There were other differences such as Mycenaean kingdoms or baronies occupying strategic summits which were protected by strong defensive walls, of Cyclopean construction, at Mycenae and Tiryns, though Pylos is a notable exception, it had no defences at all. Around Mycenae, at least, we know there was a well-organised road system and there are signs that the roads were protected by guard stations at selected points.⁴⁰

The height of Mycenaean power and wealth is in the last phase of the Aegean Bronze Age (Late Helladic 111) about 1400-1200 B.C.; it supplants the Minoan civilization and it is the Mycenaeans who reoccupy the Palace of Knossos, or at least their influence is clearly indicated, from about the middle of the fifteenth century B.C. It was a short-lived occupation or period of influence coming to an end with the final destruction of the Palace of Knossos in about 1370 B.C.⁴¹ While we know of many excavated Mycenaean sites such as Dendra, Berbate, Argos, Zygouries, Vaphio, in addition to those I have already mentioned but not overlooking Lerna or Lefkandi, of which more later, it is Mycenae which has been treated as the typical Mycenaean site. I think this position arises for two reasons, the first being the excavation by Schliemann and his attendant claims and the second from Homer's *Iliad* where he describes Agamemnon as King of Men.⁴² But it seems to me that Tiryns and Pylos may have been equally substantial

kingdoms. I accept that Mycenae may have been the pre-eminent kingdom, certainly its architectural and engineering achievements are outstanding and coupled with the obvious wealth, as proved by Schliemann's finds, it is a kingdom of discernible importance. Within the walls of the fortress enclosing the palace there were also houses, great and small, to accommodate the other members of the royal family, the chief ministers and officers, civil and military, the smaller houses for the lower orders.⁴³ The general population lived in settlements in the surrounding hills, such as Kalkani hill and on the ridge above the Treasury of Atreus. The view is expressed that the poor and slaves lived in huts of one or two rooms made of crude brick or wattle with flat roofs and earthen floors.⁴⁴ The Palace was a magnificent building with a large court on one side of which was a megaron and on the other an audience room with a throne where the King would receive official visits, together with a bathroom and shrine.⁴⁵ The houses within the fortress which have been identified include the Ramp House, House of the Warrior Vase, South House and Tsountas' House and all have megaron type rooms.⁴⁶

This final and great construction was commenced in the second half of the fourteenth century B.C. and includes the famous Cyclopean walls and the Lion and Postern Gates. While the building of the walls is an incredible engineering feat, the architect has used both the disadvantage of the site and the Cyclopean walls to create ground to fit the grand design of the Palace rather than, as is usual, to adapt the building to the available ground. It illustrates the imagination and skill of the Mycenaean architect and the technical skill of their engineers.⁴⁷ The nearby Treasury of Atreus is yet a further example of constructive planning, the clever use of ground conditions; it proves they had the mathematical and engineering skills to calculate thrust and stress which would be present in the completed building. Consider only one element of the building, the inner lintel; it is about 5 metres wide, 8 metres long and 1.20 metres high and weighs about one hundred tons, even getting it in place is a major feat; the presumption is that they brought it along the side of the hill then dropped it exactly in place.⁴⁸ Not only Mycenae and Tiryns were fortified, Dendra, Gla, Mycenaean Argos and the Acropolis of Athens had mighty defensive circuits erected about them.⁴⁹ At Athens a Mycenaean staircase and well have been found on the north slope of the Acropolis and Mycenaean burials are coming to light in the town below.⁵⁰

Lefkandi, on the west coast of Euboea, is a more recent discovery, halfway between Chalcis and Eretria which were formerly regarded as the two main cities of the island. It seems to have been,

MYCENAE : HOUSE OF COLUMNS

RESTORED PLAN, GROUND FLOOR

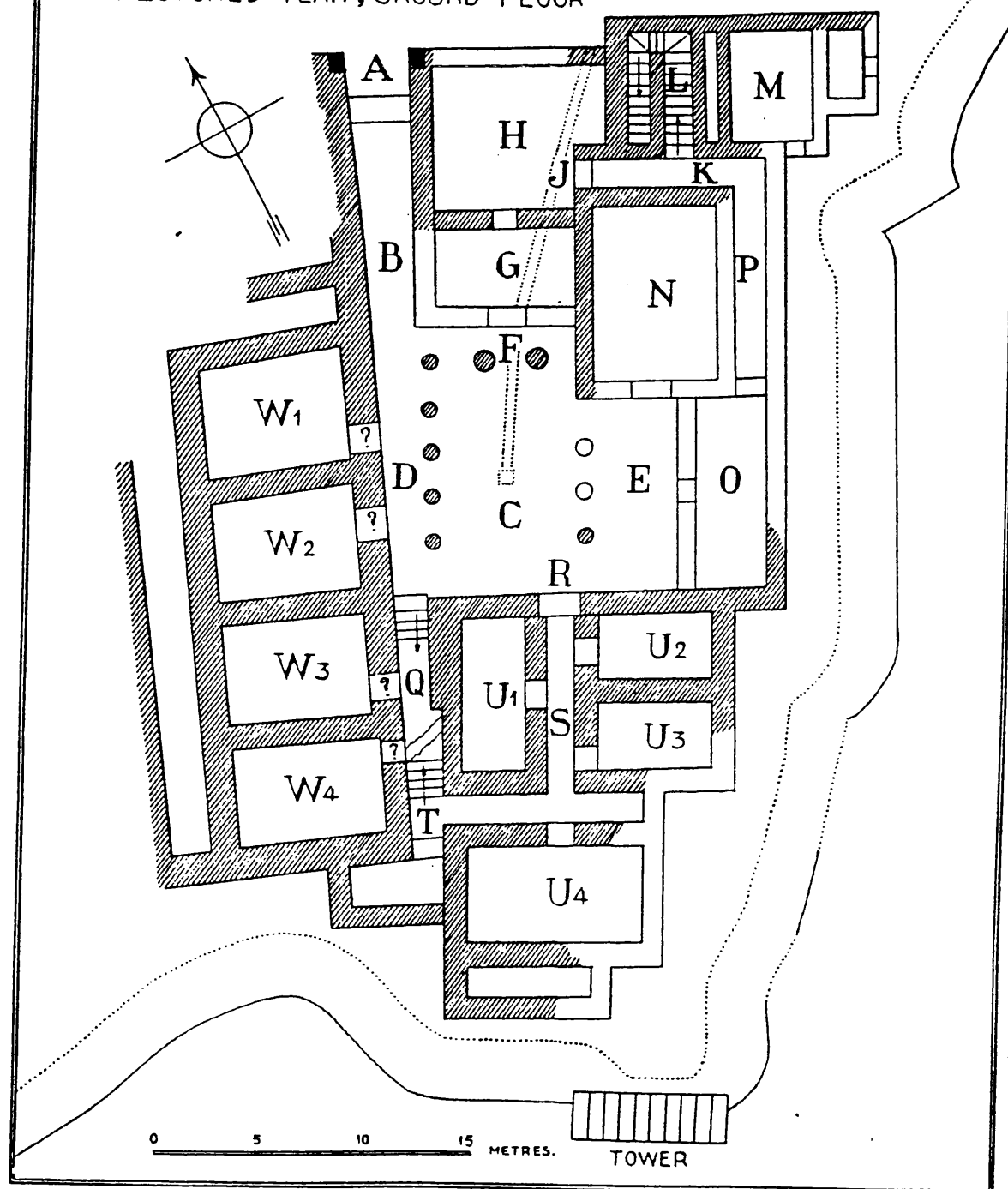


Figure 15: House of columns, Mycenae, Ground Floor. Restored Plan
(After Wace, Mycenae, by courtesy of the Princeton University Press)

to use one description, ‘Stunningly prosperous (by contemporary standards)’ and it seems many Mycenaeans moved there from the mainland at the commencement of the destructions around the late twelfth century B.C. ⁵¹ Lerna is another interesting site if only because of the ‘House of Tiles’ destroyed in the Early Bronze Age. The House of Tiles was a substantial building of stone and mudbrick walls with a pitched roof clad with terracotta and stone tiles. It was 12 metres by 25 metres, approximately, in size and had many rooms and corridors together with staircases to an upper floor. ⁵² Lerna developed, after the destruction, into a Mycenaean settlement but one without fortification. ⁵³ What is of interest is the size of the House of Tiles which, in that context, is not unlike the LBK long-house. Indeed, if one compares the later megaron with its porch, the main large room and the rear storeroom and rear entrance with the LBK tripartite long-house, it is not difficult to see a ‘modern’ version of the tripartite long-house, as a form of continuity from their Neolithic ancestors.

The megaron was also found at Troy and Homer seems to be describing a megaron when giving details of the great hall at the Palace of Ithaca which he uses as the place of execution of the Suitors by Odysseus in the *Odyssey*. ⁵⁴ In reading the translation by E.V.Rieu it is clear that the Palace is built over at least three floors, the basement where there is at least one storeroom, the ground floor where the great hall is located and at least one upper floor where Penelope’s bedroom and also, seemingly, the domestic womens’ quarters together with another storeroom are situated. What has been a matter of considerable debate has been Homer’s detailed description of a side door, the orsothyre, leading from the megaron to the domestic apartments of the palace and also giving access to the courtyard but past the main door leading into the megaron. ⁵⁵ This debate is now virtually at an end with the excavation by A.J.B.Wace of the House of Columns at Mycenae where not only is it clear the house is constructed over three floors but the megaron has an orsothyre giving access to the domestic quarters and egress from the house which by-passes the main door leading into the megaron. (See Figure 15)

A.J.B.Wace makes it clear that his is ‘an unprejudiced effort to adhere to the words and text of Homer and to give them an accurate and reasonable meaning’. ⁵⁶

While the debate on the question of the side door is seen to be resolved there remains some discussion on the interpretation of the grammar but I am of the same view as A.J.B.Wace who observes that we should not press the meaning of words too closely. ⁵⁷ It is Dorothea Gray who

acknowledges the importance of the House of Columns in providing a Mycenaean parallel for the one thing in the Homeric house plan which was thought to be un-Mycenaean.⁵⁸ She also comments that in the Late Bronze and early Iron Age there are only two known houses where the megaron has a side door, the House of Columns at Mycenae and the principal house at Karphi, the hill city in which the Aecheans of Crete seem to have found refuge in the 11th. and 10th. centuries B.C.

What sort of a society were the Mycenaeans? The Mycenaean civilization, like the Minoan civilization, evolved over a number of centuries and I consider that society in its golden age c1400-1200 B.C. Unlike the Minoan civilization and its leaders the Mycenaeans were led by warrior rulers, the emphasis on the defence of their palaces and the military artefacts both testify to this conclusion and, of course, Homer's epic of part of the Trojan war illustrates their warlike tendencies. But they were also an intelligent people as proved by their architectural and engineering achievements which surpass those of the Minoan civilization. All the evidence we presently have suggests these people were the early Greeks and the decipherment of the script on the Linear B tablets by the young architect, Michael Ventris, assisted at a crucial stage of his work by the Cambridge philologist, John Chadwick, in 1952 with his conclusion that it was an archaic form of Greek,⁶⁰ shows that it was used for both administrative and business purposes. It was still an agriculturally based economy but the skill of their craftsmen was the basis of their great wealth arising from their extensive trading activities. What is beyond question is that it was a monarchical society centred on the Palaces, an elite whose palaces and houses were an outward expression of power and authority. Though monarchical it was an orderly and regulated society and planning is central to that authority both in physical and societal matters. Our knowledge of their religion comes both from the archaeological evidence and the Pylian tablets and it is a polytheistic religion. There is evidence that among the divinities, and actually named, are Zeus, Hera, Athena and Poseidon, all deities more commonly associated with later Greece.⁶¹ What seems to be missing, when compared to the Minoan culture, are the sanctuaries, the rural shrines or religious locations, that is, caves, mountain summits and so on. In consequence we do not know how the general population expressed their beliefs but religion does play a part in Mycenaean society. This great civilization comes to a violent end about 1200 B.C. and while not of concern to this thesis it does seem to have been caused by stasis on mainland Greece and the so-called Sea Peoples in the Aegean Isles.⁶² It was not a complete end to this civilization as we shall see in the next chapter.

Chapter 3

Decline and Renaissance : c 12th Century - 6th Century B.C.

That some disaster befell Greece at or about the end of the 12th century B.C. is not in dispute; whether it was a Dorian invasion is not known though many accept this hypothesis but the evidence does point to a violent end to the Mycenaean civilization, an end which had severe repercussions for Greece in the succeeding centuries. It has properly been called the Dark Age but this is a title which I find confusing unless we are all agreed that the title conveys one meaning, that is, we know nothing of these centuries, of what happened to the people, to the society of which they were a part, to the economy, to communication, to the arts and to the other features of daily life, but that is not the position. Alternatively, if we mean by the designation the 'Dark Age' a period where we know great changes occurred, not necessarily for the better, where society is changing, where people's perceptions are altering, where their requirements are becoming more demanding, then the 'Dark Age' is an apt title, one which may well properly reflect our uncertainty of what did happen and how society was affected and this due to the paucity of the material evidence and the total absence of any written record so far as we know.

Perhaps the most intriguing aspect of the Dark Age is the absence of virtually any written evidence when the Linear A and Linear B syllabic scripts are well attested in both the Minoan and Mycenaean civilizations, yet disappear with the destruction of the Mycenaean civilization. So far as we currently know the only evidence of Linear B script surviving was found on the stones of a building at Iolkos in Thessaly, a building probably of 11th century B.C. date ¹ but this hardly constitutes evidence for the continuation of Linear B script after the destructions. It is not until around 750 B.C. that writing returned to Greece in the form of the Phoenician alphabet ² and this seems to be generally recognised as the original base of the Greek language. It is not the purpose of this thesis to consider the many arguments concerning the birth of the Greek language, suffice it to say there is an unexplained gap of some 450 years where no written evidence exists. It is purely conjectural on my part but a logical explanation may be that it would only be a relatively small number of the ruling class, that is, the administrators who would be necessary for such a complex society that had the knowledge of writing and most, perhaps all, perished in the destructions. But it is not only writing which disappears, there is a massive

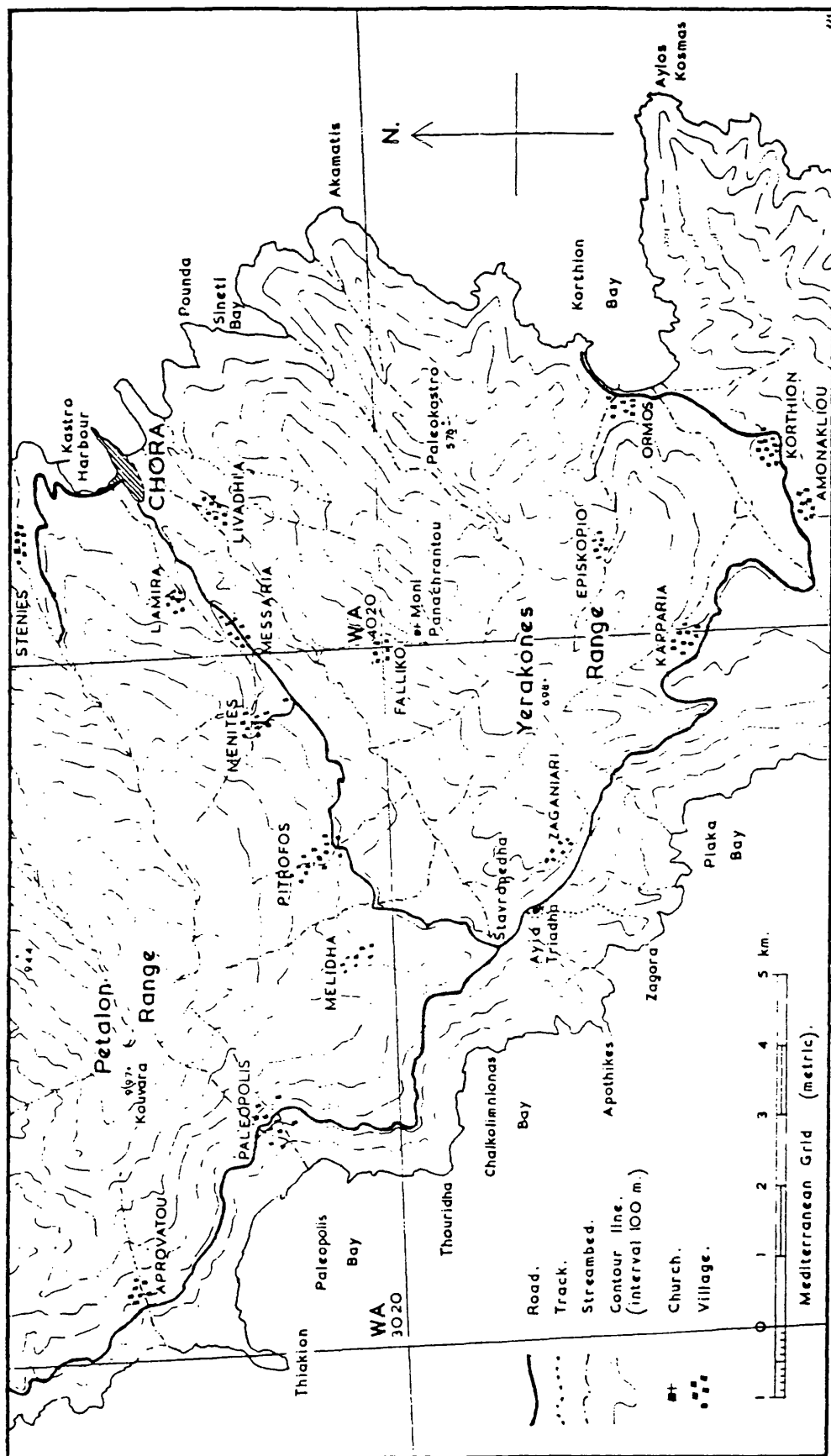


Figure 16: Map of the valley of Messaria

depopulation of mainland Greece as attested by the evidence of settlements which were destroyed, severely damaged or abandoned; I give only two examples; in Attica from 24 settlements in the 13th century to 12 in the 12th century B.C., a drop of 50% and in Boeotia from 27 settlements in the 13th century to 3 in the 12th century, a drop of 89%. ³ Many will have perished but many more will have moved, some westwards but mainly to the east using known sea routes. ⁴ The knock-on effect of such population losses and dispersals must have impacted on organised society as it then was most probably on the system of rule and bureaucracy and in the dilution, if not the extinction, of many of the skills and arts of that society. Architecture and planning would be two of the immediate and prime losses, technological advance in both disciplines would be at an end, the main requirement of the survivors would be securing a place of safety. While the destructions were extensive on mainland Greece they were not total and while no area escaped some areas do not appear to have received the full brunt of the invasions; Achaea is one such area. This is a mountainous district in the north-west of the Peloponnese and the evidence presently available shows not a decrease but an increase in the number of settlements in the 12th century as opposed to the 13th century, most of these settlements were within the shelter of the mountains. ⁵ While the main body of dispersals went eastwards, many to the central Aegean islands which do not appear to have been affected by the invasions, I want to look at three sites in particular, two of which represent settlements in what might be termed awkward or out-of-the-way locations, one being Zagora on the island of Andros and the other being Lefkandi on the island of Euboea which is so close to the mainland that it can be considered as part of mainland Greece, the third site being Athens which in many ways is unique.

The settlement of Zagora was built on a headland and was contained in an area of about fifteen and a half acres or 6.7 hectares with both natural and built defences. The site was, however, deficient in water, no reservoirs or springs have been found within the site though there are four known springs in the immediate area of the site. ⁶ The settlement would not have been capable of a sustained defence against a large invading force though water may not have been an immediate problem; it has been suggested that because of the large number of pithoi fragments found all over the site that water will have been collected from the flat roofs of the houses in the pithoi and stored. The basic economy of the settlement was agriculture and cattle raising but there is also evidence of a fishing industry and some evidence, mainly imported pottery, to suggest trade of some sort. ⁷ (See Figure 16)

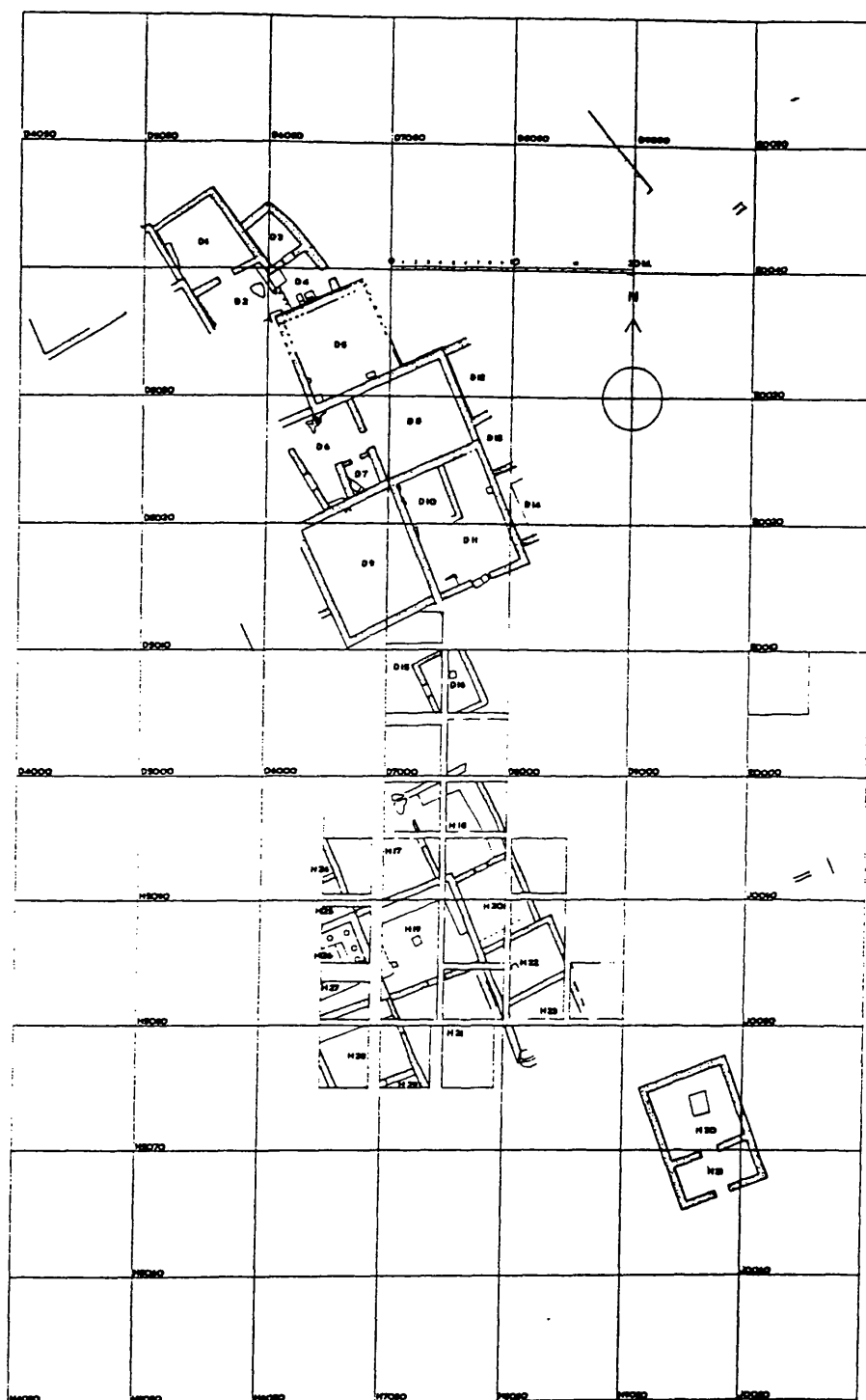


Figure 19: Zagora. Plan of the units excavated in 1960 and 1967

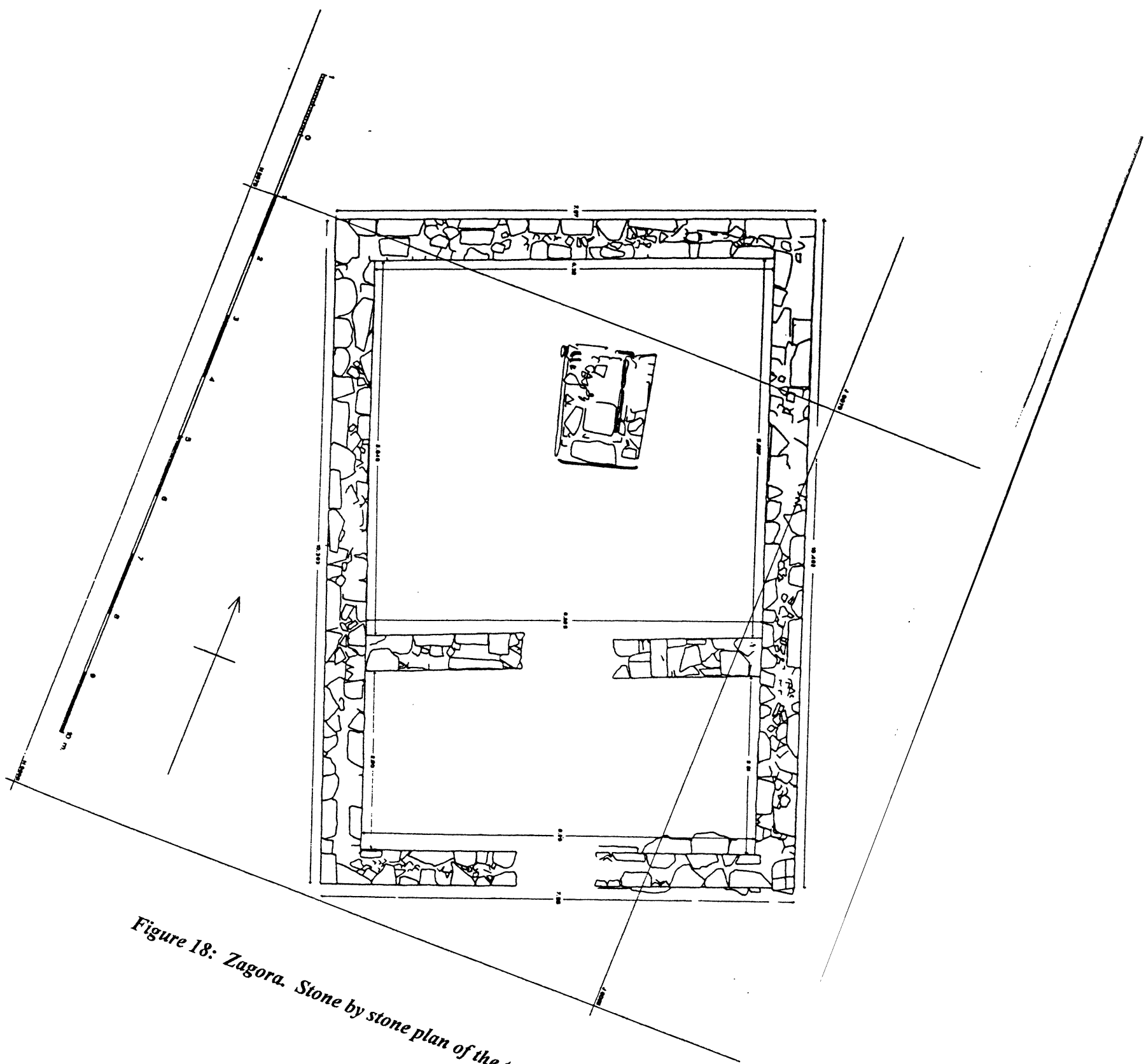


Figure 18: Zagora. Stone by stone plan of the temple

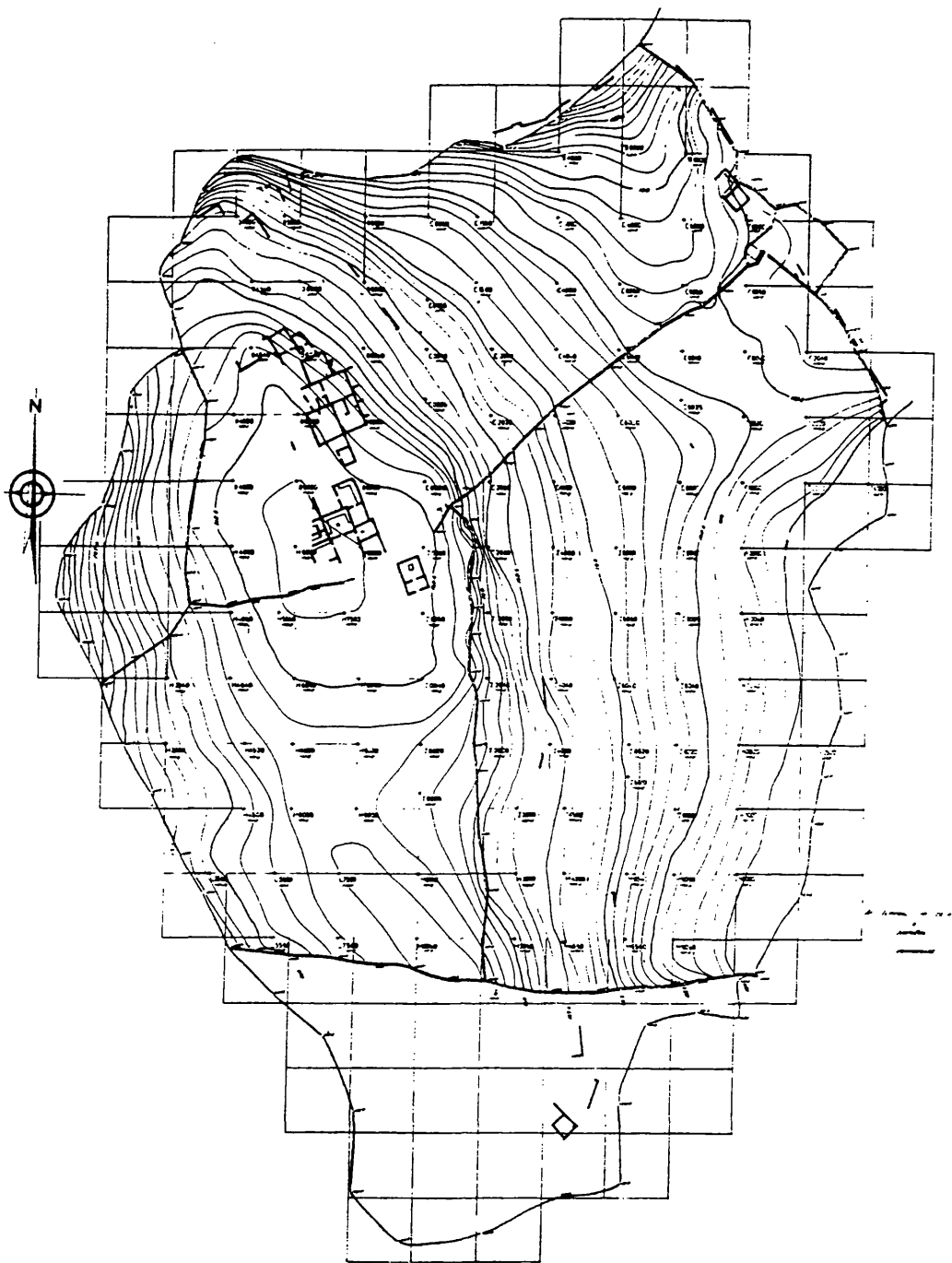


Figure 17: Zagora. Survey grid of the site and plan of the buildings excavated in 1960 and 1967. Scale 1:500

The housing so far uncovered is of the 'megaron' style but of modest dimensions. There are two interconnected blocks, the walls are rectilinear and the buildings are rectangular. The wall constructions are of stone, either schist or marble or a composition of both with timber beam framed flat roofs covered with schist slabs which were then covered with a layer of packed clay. The excavators make the assumption that there were window openings in the walls to provide light. The houses vary in size with the smallest measuring 5.5 sq. metres and the largest, of which there are two, being 53.1 and 51 sq. metres, respectively. There is a yet larger area of about 62 sq. metres which after consideration the excavators determined was a courtyard. ⁸ This is an interesting development in what might be termed 'ordinary' housing as it reflects the courtyards found at Çatal Hüyük and, of course, was a prominent feature of later Greek and Italian homes. (See Figure 17)

To the south-east of the excavated buildings is a free standing structure with external dimensions of 10.4 x 7.56 metres which is clearly a temple, but it is a later structure, possibly the 7th century B.C., than the settlement. It is a variant of the megaron plan, which is not unusual, and consists of a closed prodomus, 2.80 x 6.29 metres, and a cella, 5.87 x 6.30 metres which contains a trapezoidal structure, either the base for a statue or an altar; the building's external dimensions are 10.24 x 7.56 metres. The excavators are of the view that the temple was erected on an earlier open sacred enclosure, not an unusual situation. ⁹ That some cult was practised seems evident though, unfortunately, beyond this we cannot go. (See Figure 18)

To the south-east of the temple, on the slope below the plateau, further houses and part of an ancient road have been found as also part of the fortification wall and a gate near the south end which have been excavated. ¹⁰ The settlement seems to have abandoned the promontory at the beginning of the 7th century B.C. while the discoveries so far found suggest that it flourished in the 8th century B.C. ¹¹ I have already drawn the comparison with Çatal Hüyük on the use of courtyards but an equally relevant comparison is Myrtos at Fournou Korifi where open areas are incorporated in the construction of the settlement. No streets have been found as yet but the layout of the houses so far uncovered does suggest some form of planning and the 'megaron' style suggests a Mycenaean link, however tenuously. (See Figure 19)

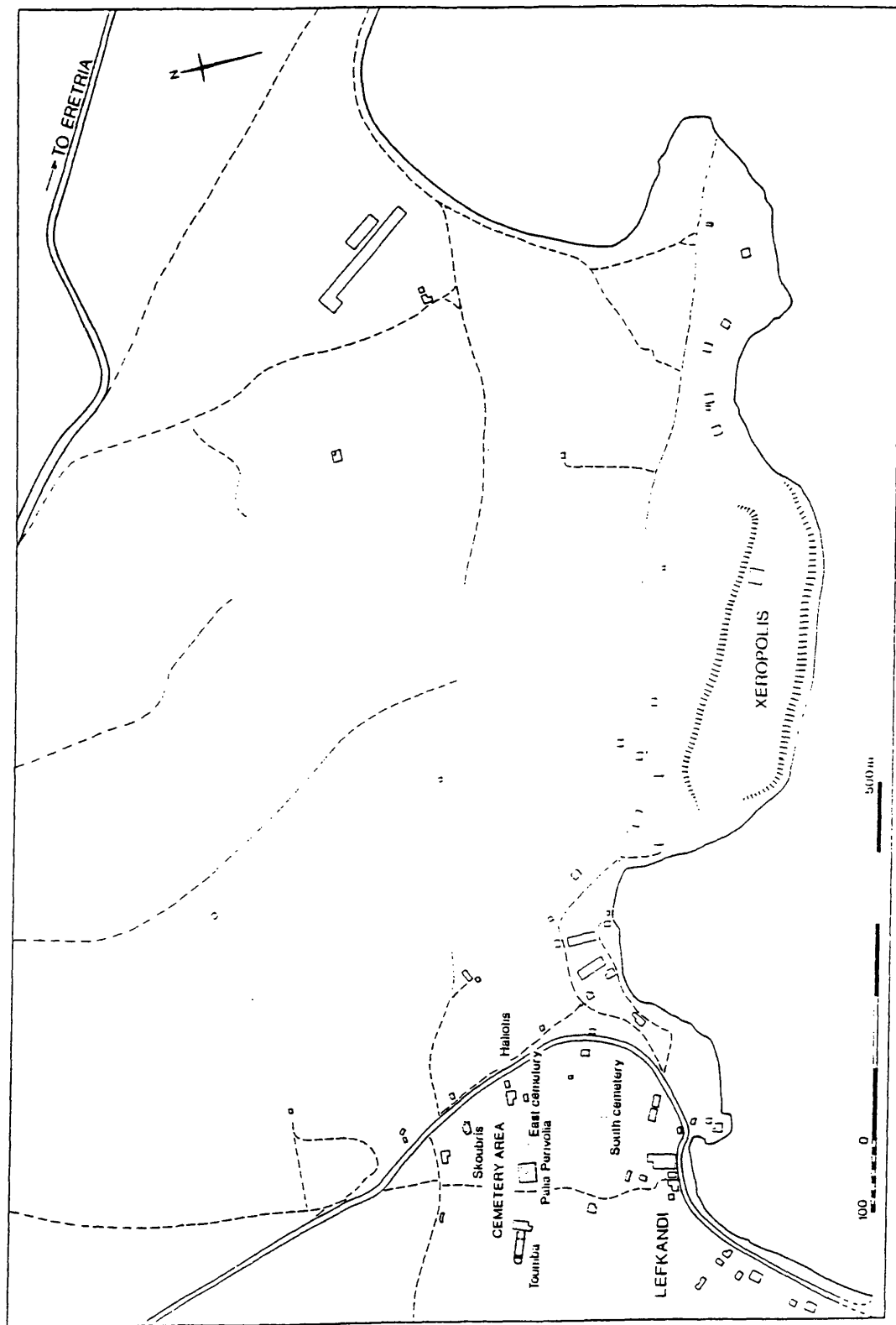


Figure 20: Regional map of Lefkandi with its ancient sites

In considering Lefkandi, located on the south-west coast of Euboea, it is tempting to favour the argument for the continuity of the Mycenaean culture as Lefkandi was not destroyed in the great wave of destruction around 1200 B.C. but continued until destroyed towards the end of the 11th century B.C.¹² There is a break though not a long one as can be substantiated by finds that can be identified and are dated no earlier than the last quarter of the 10th century B.C.¹³ It is the second settlement which lasts almost to the end of the Dark Age which I wish to consider. The main body of archaeological evidence comes from the cemeteries and graves excavated at Skoubris, Palia Perivolia and Toumba; three of the six cemeteries so far found which lie to the north and west of Xeropolis but as yet the extent of the settlement has to be determined. What does seem clear from the evidence so far recovered is that this was a prosperous settlement, certainly in the 10th century B.C. when the Toumba building was constructed at some time in the period 1000 - 950 B.C.¹⁴ (See Figure 20)

Of the settlement at Xeropolis it is known that this, the last occupation, commenced around the beginning of the 10th century or possibly late in the 11th century B.C. and continued for some two hundred years. Not enough is yet known of the buildings at Xeropolis, a point to which I shall return, but it is the cemeteries which provide the evidence. There is evidence that a bronze foundry was in operation as fragments of the moulds used have been found and this could indicate that contact with Cyprus may have been re-established.¹⁵ The earliest cemetery is Skoubris where 63 tombs and 19 pyres have been excavated and where all the earlier material was found. Both Toumba and Palia Perivolia seem mainly in use from about 950 to 850 B.C. and where, so far, 35 tombs and 9 pyres and 47 tombs and 46 pyres, respectively, have been found.¹⁶

Toumba has proved to be particularly rich with the graves containing many gold objects, there is a preponderance of gold rings plus gold earrings, bracelets, pendants and bands and a gold fibula together with bronze and faience bowls imported from the Near East and Egypt, yet further evidence of extensive overseas contacts.¹⁷ We know from the ceramic evidence accumulated that contact with Athens must also have existed, there is clear evidence that the ideas of the Athenian potters influenced their contemporaries in Lefkandi.

It is the find at Toumba of the building that is of specific interest to me; it is the only building so far found in the area of the six cemeteries, the Toumba cemetery abuts the eastern end of the

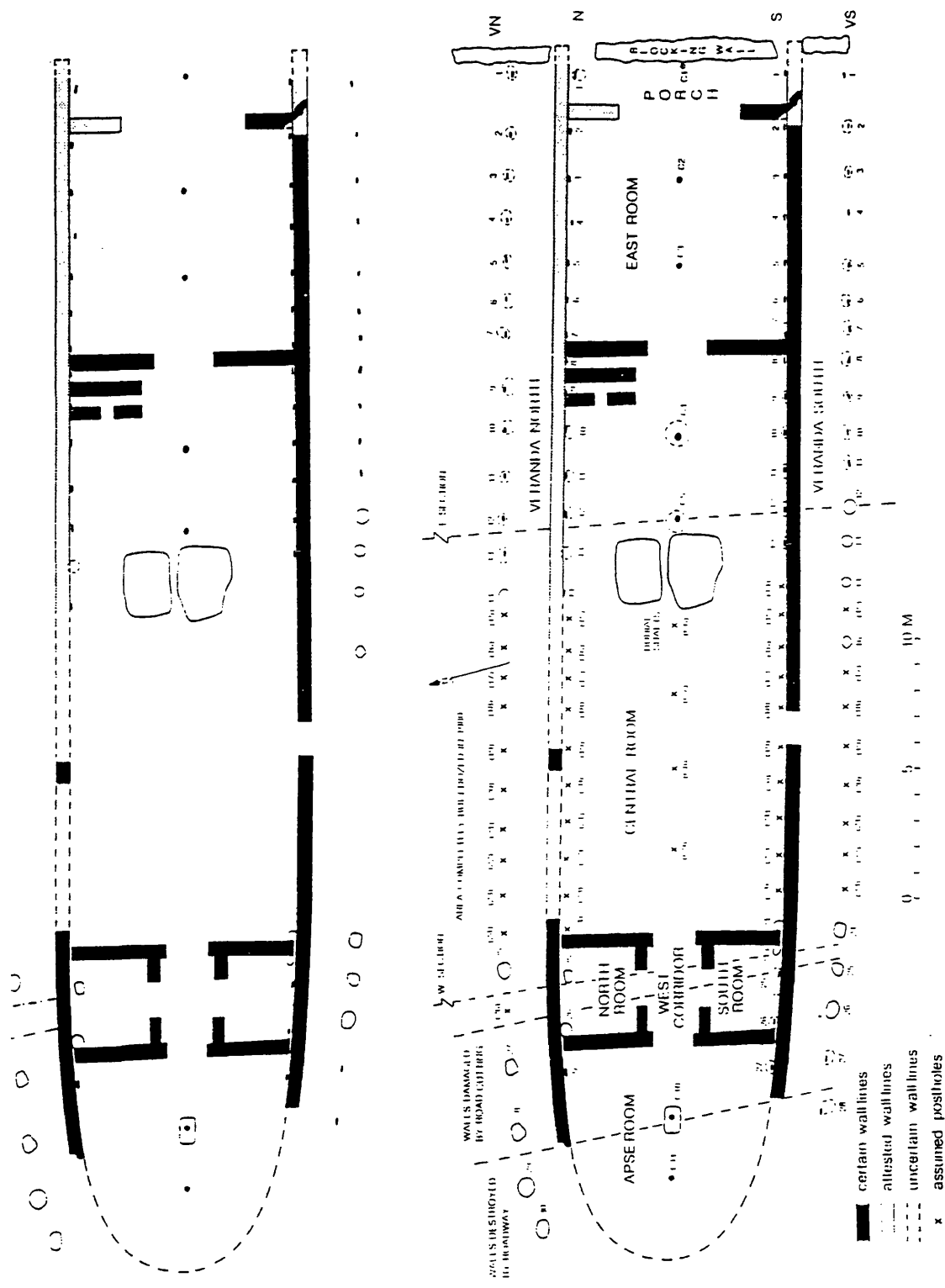


Figure 21: Lefkandi. Schematic plans of the Protogeometric building showing the areas of damage, section lines and the numbers of post

building. It is a long building with an apsidal western end and it could properly be classed as a house and yet it contains two burial pits. There are so many questions posed by what is found in this building that in this thesis I can only touch, even if then briefly, on those features of particular interest to me. (See Figure 21)

Externally, the building has a length of some 50 metres, the length is not known precisely, and a maximum width including the verandas of 13.80 metres. At the east end was a shallow porch which gave access to the East Room, it was roughly square and had a doorway which in turn gave access to the Central Room. The Central Room was 22 metres long and 9 metres wide and this room contained the two burial shafts. The room had a doorway on the middle of the south wall which gave access to the south veranda. On its west wall there was yet a third doorway which opened into the West Corridor, some 3.30 metres long from which access to the small North and South Rooms, on either side of the corridor, was obtained . The west end of the corridor led into the Apse Room which was located at the western end of the building and constituted the western extremity of the building. ¹⁸ An unusual feature of the building was the veranda which extended along the south wall, encircled around the apsidal west end and continued along the north wall. Both the main structure and the verandas were roofed and it was most probably a thatched ridge roof. ¹⁹ In my view there are similarities with the LBK long-house and the Mycenaean megarons, a form of continuity which cannot be dismissed as purely fanciful.

While the excavators put no time span on the construction of the building and its subsequent partial dismantling and burying under a mound or tumulus their view is that these events happened within a fairly short time of each other ²⁰ and one of the factors bearing on this assessment is that the earth and clay floors throughout the building had been so little trodden down and compacted. ²¹ One final aspect of interest is the pteron or veranda which J. Coulton states 'connects it clearly with the characteristic peripteral temple of later Greek architecture' but this is simply an observation though he feels it does 'call into question the belief that the origin of the surrounding portico lies in religious architecture'. He considers the Toumba building was not a temple but that the veranda is a feature of high status domestic architecture. What he fails to mention is the side door in approximately the middle of the south wall in the Central Room and the fact that there is no corresponding door on the north wall. We have the indecision of whether the Toumba building is a house or a temple, though the final conclusion is

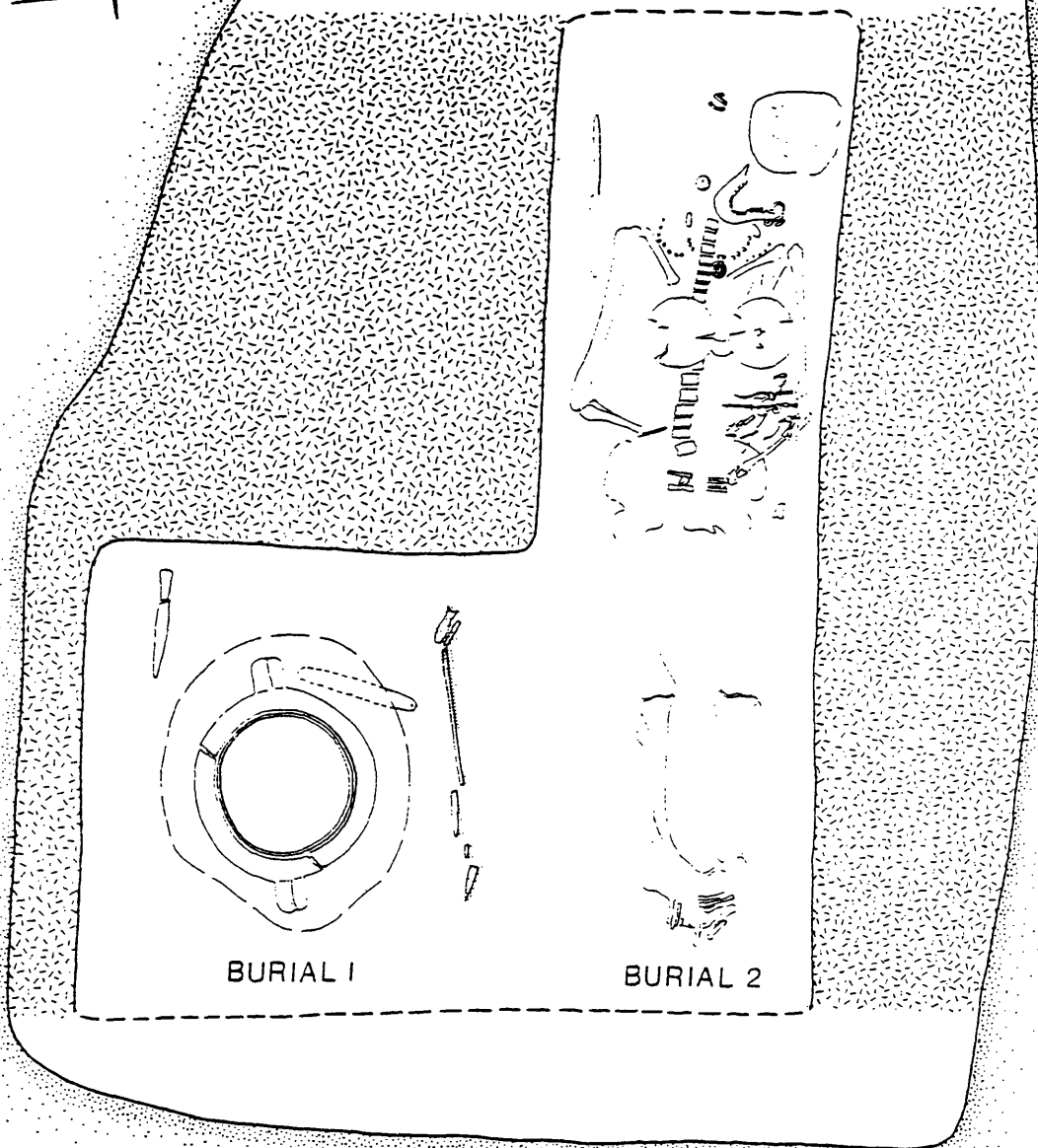


Figure 22: Lefkandi. Central Room, plan of the burials in the S. shaft

that it is a funerary house, but the door on the south wall intrigues me. There seems no logical reason for a door to be inserted on the south wall only, in today's regulated world we would consider this to be a fire exit, but it is unlikely this would be its purpose in 950 B.C. The most apparent function is to allow access to and egress from the building which cannot be observed from the front, and only other access, to the building. In this context I find it comparable to the orsothyre of the Palace of Ithaca in the *Odyssey* or the House of Columns at Mycenae, both of which I have already discussed. There seems no doubt that the building at Toumba was single storey so the orsothyre would only give unobserved access to the two storerooms and the apse room at the west end of the building and, of course, to the Central Room. It may be stretching a fact too far but the whole concept of the building is closely identified with the great megarons of the Minoan and Mycenaean cultures and it seems not unreasonable to see in the Toumba building a continuation, perhaps a 'modernised' version, of the ancient tradition.

It remains to consider the burial shafts within the Central Room and here no clear picture emerges. I do not propose considering the present divergence of opinion as to whether the burials occurred first and the building thereafter or the alternative that the building was constructed first and thereafter the burials took place. There is considerable speculation concerning the burials where the excavators comment on the uniform nature of the fill in the south shaft which could imply that the two burials were made simultaneously but they then say it need not be so. Their view is it would not have been difficult to have removed the fill for the second burial - no comment is made on which of the two burials might have been the second burial - but they then create further confusion in describing the inhumation of the female when they draw attention to the crossed position of the hands and feet and the 'unexpected' presence of an iron knife with an ivory pommel alongside the head with its handle near the right shoulder which, they suggest, 'leave open the possibility of suttee'. ²² (See Figure 22)

If the cremated remains in the amphora which was buried in the south shaft were those of a warrior hero, the burial of four horses in the north shaft appears to confirm this status, then the inhumed female would also seem a person of considerable standing in the community. I do not propose detailing all of the gold jewellery, the two large discs of sheet gold, placed over her breasts, the lunate-shaped sheet of gold, rings, faience, crystal and other items all found with the body but clearly this was a very rich grave which, in turn, sends a clear signal of the power which must have been exercised by the incumbents in the community. ²³

The obvious parallel has been drawn by the excavators with the funeral of Patroclus in the *Iliad*; the four horses buried in the north shaft bear comparison with the four high-necked horses Achilles puts on Patroclus' pyre but the twelve Trojans murdered by Achilles do not equate with the single female in the south shaft though the principle may be the same.²⁴ The final coincidence is the burying of Patroclus' remains in a vase which is then buried in a mound²⁵ as was the building at Lefkandi. The description heroon is mentioned by the excavators, the size of the building and the burials implying that the building has served as a heroon, a place for a warrior king, a semi-divine person heroized after death.²⁶ Logically, given the oral tradition of passing down the generations tales of past heroes and their heroic deeds, even if mythologised to a greater or lesser extent, given that Troy, as we know, now appears to have been an actual event which would be only some 200-300 years old at the time of the Lefkandi burials, then it is possibly feasible that the event at Lefkandi is a replication of Patroclus' funeral but for one important fact, this is the only recorded instance we know of either before or after 950 B.C., of such an event. There is nothing in the archaeological evidence or in the earliest extant writings we have or the writings we know of which suggests such a human sacrifice was obligatory or required. The sacrifices of animals is well known and, indeed, recorded but not of humans. There is also the problem that while the main story-line of the *Iliad*, the siege of Troy, did occur and other elements of the epic seem to be accurate there is still a large portion which can only be termed poetic licence and must be treated with caution. It leaves us with an enigma which will never, probably, be solved.

The number of cemeteries so far discovered indicate that there was a community existing at Xeropolis but the lack of evidence on housing precludes us from making any assumptions as to the number of people residing there at any one time. That it was a rich community is established from the quality of the artefacts recovered especially from the Toumba cemetery but our lack of knowledge of the number of houses and how they were disposed in the settlement precludes us from reaching any other conclusions.

While Zagora and Lefkandi provide important insights to the Dark Age it is Athens alone which provides us with an almost certain continuity down the centuries which is not known of any other place in the Graecian world, a continuity which is attested by the archaeological evidence we now have and that makes Athens unique. It is almost impossible to resist claiming an even

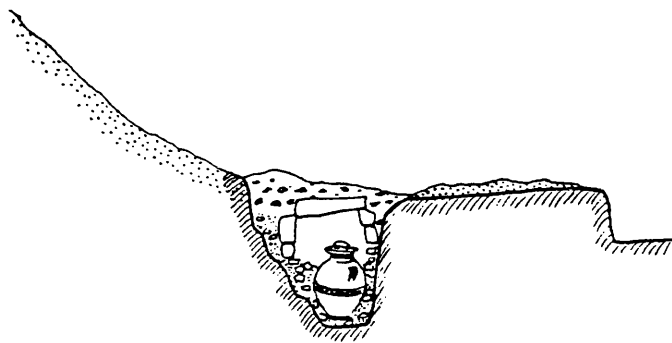


Figure 23: Cremation Burial
Athens, Early Geometric, Agora. Hesp 18, p. 281, fig 2

greater longevity, one reaching back to the Neolithic as evidence of Neolithic people inhabiting the Acropolis has been found ²⁷ but we cannot be certain that continuous occupation of the Acropolis extended into the Bronze Age. What is certain is that Athens was a minor Mycenaean kingdom and there is evidence to substantiate its Mycenaean connection. On the north slope of the Acropolis and within the defences has been found a shaft, some 40 metres in depth, in a natural cleft in the rock. They constructed a staircase of seven flights, the first two of timber and the remaining five of stone to give access to the well; ²⁸ similar wells have been found at Mycenae and Tiryns though in both of these citadels the wells were outside the defences and elaborate arrangements were made to get the water while keeping the location of the wells hidden from the enemy. The staircase down to the well shows an architectural skill in the management of the successive flights. ²⁹ The Acropolis also had its cyclopean walls, a section of the fortification wall can still be seen and the line of the wall has been traced. ³⁰

For whatever reason it seems that Athens in particular and Attica generally escaped the major waves of destruction towards and at the end of the Mycenaean civilization. The main evidence is in the pottery recovered and artefacts from burials but there is virtually no architectural evidence surviving from the Dark Age though we know there were houses at the bottom of the southern slope of the Acropolis. So far as the pottery is concerned there is general agreement that what has been called the Protogeometric Period began in Athens around 1050 B.C. and lasted until about 900 B.C. ³¹ and this style of pottery was followed in other areas such as Argos and Boeotia. The main source of evidence is the Kerameikos cemetery (the potters quarters) where many examples of this style of pottery have been found. A simplistic conclusion from this information is that normal life has continued but more can be deduced; the potters are now expressing themselves in a new way though the shapes are in the main a continuation of the Mycenaean tradition. ³² That change was taking place cannot be doubted and that change extended to the dead where at some point in the 11th century B.C. we see the introduction of cremation in Athens and, of course, there also appeared in this century ironworking skills. ³³ (See Figure 23)

I am not suggesting an economic boom was occurring or that living standards were rising, as the modern vernacular would describe it, but it is a reasonable assumption that Athens, having suffered relatively little in the destructions, was assimilating and integrating the culture of the new people into their society. I do not disagree with the view that Athens, early in the Dark Age,

had assumed a position of importance and influence in the Greek world towards the end of the 11th century B.C.³⁴

We know almost nothing of their houses though it does seem that housing for the general population would have shown no improvement on earlier times. There can, I think, be expressed a reasonable hypothesis based on the little evidence we have that the houses were small and poorly constructed. While there were streets and roads there seems to have been little planning, as I hope to illustrate later. The only exceptions are the Acropolis and the Agora which I consider in my comments on the Archaic period.

What archaeological evidence we have does give some indication of life in the Dark Age. Of two burials found in Athens the first was of a male about 900 B.C. where a clay pot with the cremated remains inside was placed in a pit. Surrounding the pot were the weapons presumably belonging to the dead male. These included a long sword, spear heads and knives. This is a continuation of Mycenaean practice, but it is noticeable that they were all made from iron and not bronze. The second burial was that of a female and her treasures which included gold rings and earrings, a necklace of glass beads and an unusual chest of baked clay (terracotta). The necklace is from Egypt or Syria and the gold jewellery exhibits a technique which is found in the Near East. The chest was painted in the Geometric style with intricate and regular designs but on top of the chest are five beehive-like urns which are miniature models of granaries. Does this indicate that the most important factor in the woman's life had an agricultural base and is it also an indication that agriculture is recovering as a major economic factor in the life of the community?³⁵

While the evidence is, in many senses, minimal there seems little doubt that the lack of such evidence is itself a mute testimony to the disasters which overwhelmed Greece at the end of the Mycenaean civilization. The Dark Age is an acceptable title to cover the persecution and death of many people, to the large migratory movements seeking secure and safe havens, to the collapse of social order and organisation and with that the concomitant collapse of regional and local economies and yet it is not a picture of total disaster as the settlements and town on which I have concentrated indicate. They show a resilience in the face of disaster which is to be admired, they show a resurgence which incorporates new ideas while retaining some of the old traditions and it is Athens which perhaps makes the biggest contribution but one which does not

go unchallenged. We know little of their housing though the Funerary House of Toumba gives an insight into the combination of old and new ideas to which I have referred; it is averred that the Acropolis had a palace ³⁶ and this would be in keeping with the pattern at Mycenae, Tiryns and other Mycenaean baronies, but such a palace has not been found. Again, and in keeping with the pattern, there could well have been houses for the senior administrators around or close to the palace but no archaeological evidence exists. While what architectural evidence we have of this period does not show signs of planning in the sense we understand yet there is planning of a kind, fortification walls, ancient roads and streets, the conserving of water, the construction of flat roofs to aid that conservation, all are indicative of some social order. That there was a large population at Athens is confirmed in the evidence of the cemeteries and some form of social order and organisation would be a prerequisite to direct and enable the resurgence which is seen to take place. I will return to this point later.

I have already indicated that the house is changing and the planning synonymous with it. The house is one of the symbols of power and planning is used to maintain that power; this will more clearly be seen later in this thesis. We do not yet have temples where the fashionable cult is deified but the Toumba building is a forerunner as is the later temple building at Zagora. It is in the Archaic period that temple building can clearly be observed. But we should not overlook events taking place elsewhere, events equally if not of greater importance, and I refer to the embryonic civilization already established on the Palatine hills in Italy lying to the west and north of Greece.

The Archaic Period : 8th to 6th century B.C.

That some social order must have existed in Athens can be the only reason which explains the eminence of Athens both in and emerging from the Dark Age. Thucydides indicates this when he credits one of the early kings, Theseus, with the reorganisation of Attica into one State, at least politically, abolishing the various councils of the small towns and villages and making Athens the focal point of government in the shape of an Assembly. ³⁷ It is Plutarch who correctly highlights the strong element of mythology and the uncertainty of probability in the account of the life of Theseus but he also credits Theseus with the original act of unification. ³⁸ While Plutarch discusses Theseus' form of democracy he goes further than Thucydides in that he also credits Theseus of creating three distinct classes, noblemen, husbandmen and artisans ³⁹ and he further

claims that Aristotle says Theseus was the first ruler to incline to democracy⁴⁰ but we cannot confirm this as the first part of Aristotle's Athenian Constitution is lost to us. From what we know it seems that Aristotle acknowledges Theseus as making Athens the political centre of Attica and introducing the 'well-born' as a ruling class.⁴¹ While it was not a democracy as we understand democracy, this development was followed by the codifying of the law by Draco, around 620 B.C., we know of its severity,⁴² and the later efforts by Solon, around 594 B.C., where his initiative resulted in a dilution of the power of the Areopagus.⁴³ The move to greater democracy brought its own pressure to bear both on planning and particularly public architecture where we can see the first signs of the new order emerging. That architecture was the temple and while the main emphasis in temple building is considered to have started in the 7th century B.C. we know of earlier post-Mycenaean buildings. D.S.Robertson draws attention to the Aetolian sanctuary of Thermum where a continuous series of buildings ranging from Helladic to late Hellenic times was found. I concentrate on two buildings in particular, identified as Megaron A and Megaron B. Megaron A was a 'hairpin' building constructed of small stones in the lower part bearing walls of wood and clay which were thatched with reeds and, while we do not know, it is possible the roof was curved like a barrel vault. The building was some 70 or 80 feet in length and was orientated roughly north and south. The interior, divided by cross walls with central openings, comprised a porch, a long central room and the end apse room. It is considered that this was a house or palace. Megaron B, which was a later building, was about 70 feet long, it appears rectilinear and rectangular but the short north wall had a fairly strong curve and the east wall a subtler curve but unfortunately most of the west wall was destroyed. Again, as in Megaron A, it is divided into three areas by cross walls. What is of special interest is that eighteen thin slabs of stone were found around the building and obviously connected to it. It is certain that these supported wooden posts and this building forms one of the earliest known examples of the peripteral scheme characteristic of Greek classical temple architecture.⁴⁴ The view is expressed that it may have been either a house or temple but it is not beyond the bounds of possibility that it was built as one and ultimately became the other.⁴⁵ Megaron B at the sanctuary of Thermum, it is thought, may have been a house or temple and it appears to have had an apsidal north end. It seems to have been an early example of the peripteral temple of Greek classical architecture: it is divided into three sections in the style of the older megaron. While D.S.Robertson gave an original date of perhaps 10th century B.C. this appears to be wrong. The view is expressed by A.M.Snodgrass that the Protogeometric pottery which is said to date its construction is far more probably a later native ware and, even if Protogeometric,

would not imply a date earlier than 800 B.C. ⁴⁶ The building at Toumba, Lefkandi, is a house or heroon with three sections in the style of the older megaron and it has an apsidal west end. It has a pteron or verandah which opinion connects with the characteristic temple of later Greek architecture. It has a date of about 950 B.C. Some differences in detail exist but the similarities in principle features are quite remarkable. The evidence of these two sites while of importance is not strong enough to determine the arrival of the peripteral temple but I think that it is reasonable to assume that thoughts and ideas were already at work to identify the temple as a particular and special building which was not to be confused with the megaron style house.

It is, I believe, generally accepted that the temple developed from the house or, more specifically, from the megaron of the great palaces of the Minoan and Mycenaean civilizations. In those civilizations the palace was the external sign of power, the royal power over the general population and it is not wildly fanciful to see an expression of part of that power now reposing in the deity who is housed in the temple. That the temple has a domestic origin can be evidenced by the megaron at Tiryns in Mycenaean times, where an altar apparently faced the megaron across the forecourt. ⁴⁷ Another factor which supports the hypothesis is the difficulty which has been experienced in distinguishing some of the earliest temples from private houses which may be because, in origin, the temple and the house were one and the same. ⁴⁸ As R.E.Wycherley describes it 'The Greek temple was a house, the house of a god, or at least it represented the main hall of a house.' ⁴⁹

Temples began to proliferate in the 7th century B.C. and quite evidently became the outward symbol of the City State or Polis' perception of its own importance, the State cult was the common and accepted cult by the citizens, it was a unifying cult and it probably marked the real beginning of the close involvement of the State and religion as the source of power. An example was the temple of Apollo erected in the centre of Corinth early in the 7th century B.C. and while it apparently lacked a colonnade and there is uncertainty over its exact dimensions it was larger than any of its predecessors. More importantly it illustrates the evolution of the temple in that it had walls of dressed stone and a tiled roof, features which had been absent for many centuries in Greece, ⁵⁰ but it placed Corinth ahead of the other City States in temple construction. The later Archaic temples were rectilinear and rectangular in shape, generally speaking, but variations in design did exist. The peripteral temple of Apollo at Thermum, built over the older Megaron B building, in the early 6th century B.C. was unusually narrow for its day, it measured about 40

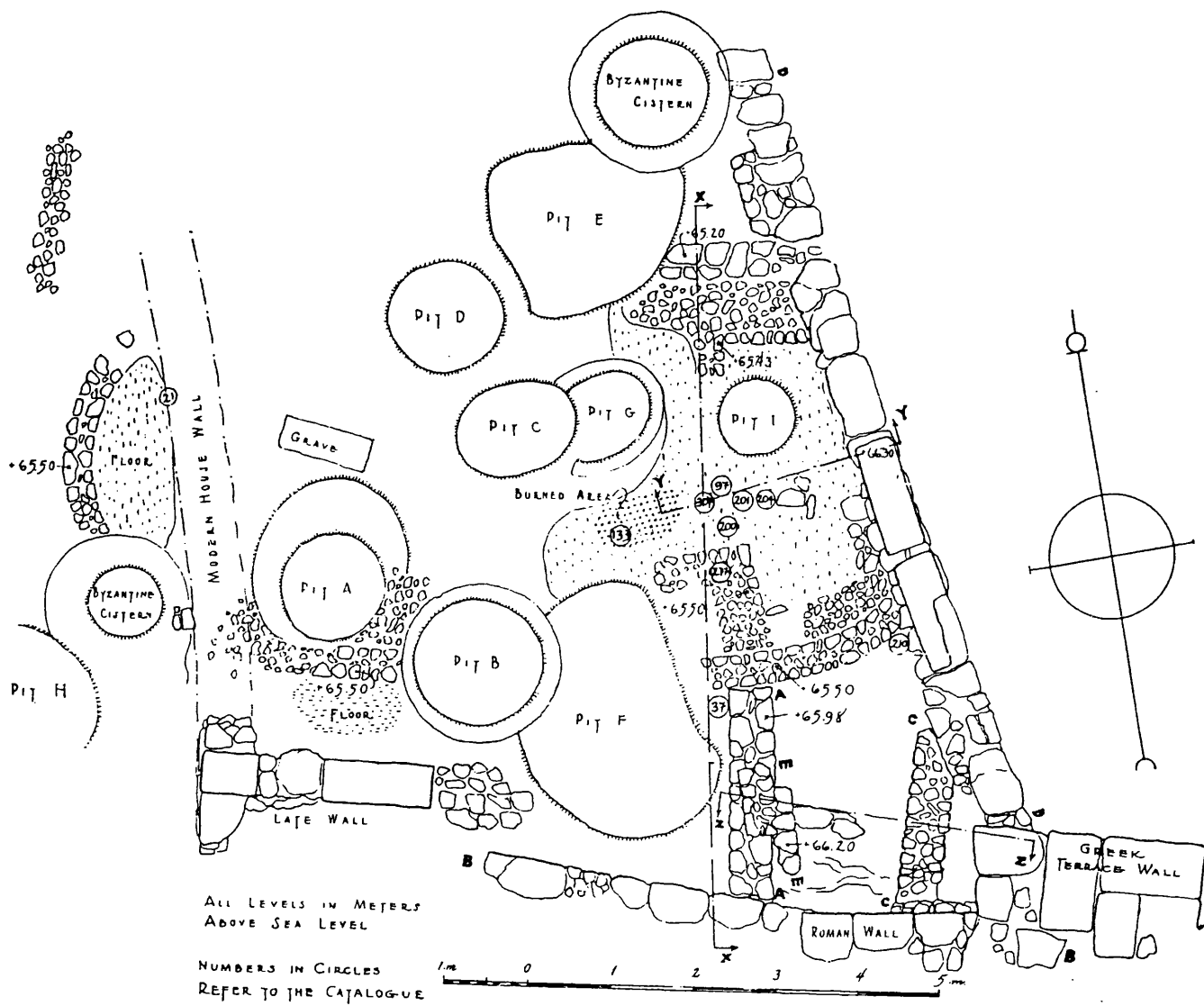


Figure 25: Athens. Plan of the Area

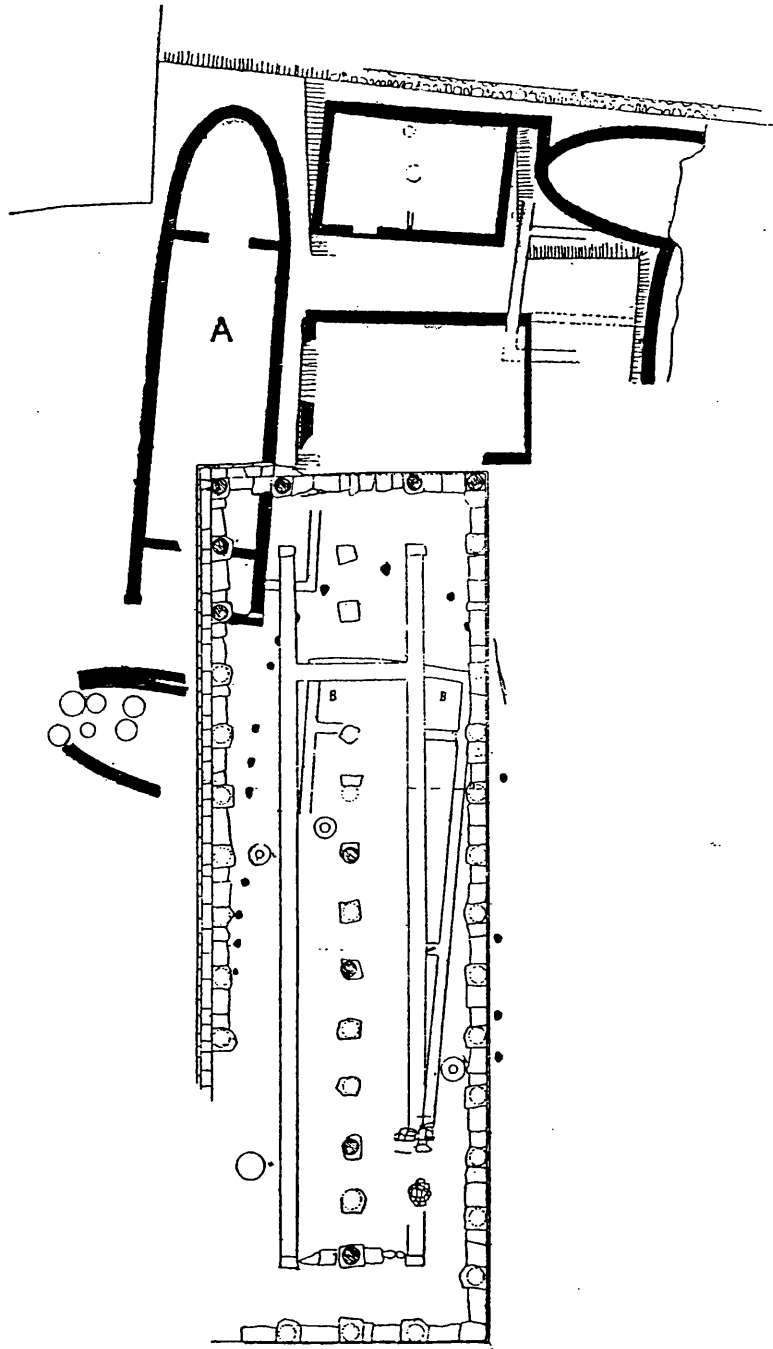


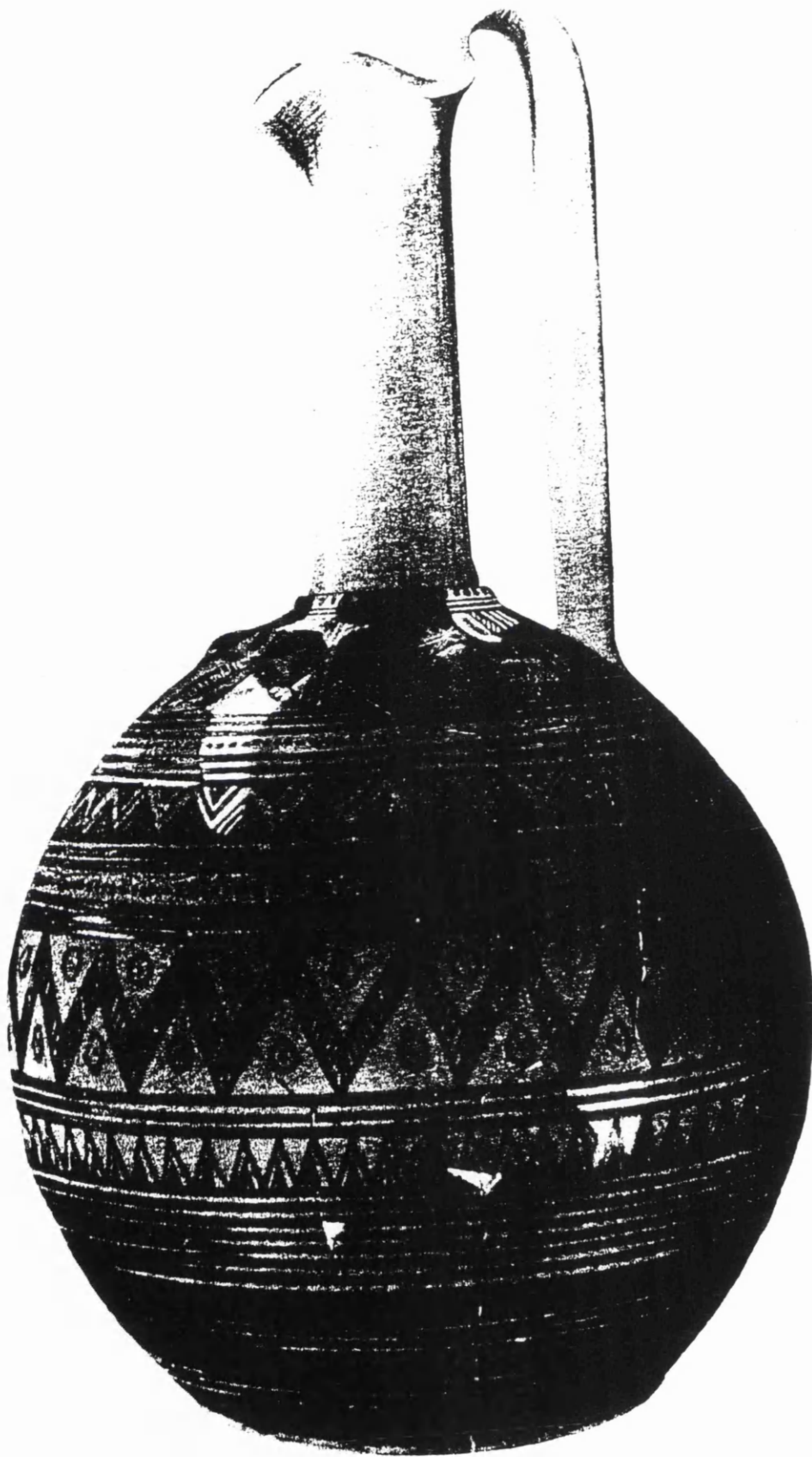
Figure 24: Temple of Apollo, Thermum, with older remains

feet by 126 feet on the stylobate and it had a central row of inner columns. There seems to have been no pronaos or porch but at the rear there was an opisthodomus of double the usual depth. The construction of the upper walls is uncertain: probably not stone and possibly wood. The entablature was probably of wood and there were terracotta metopes which evidently fitted into wooden triglyphs. From the form of the roof tiles it is clear that the temple had only one pediment at the front and at the rear the roof sloped down to the eaves.⁵¹ (See Figure 24)

I have digressed to some extent in looking briefly at a small selection of Archaic temples but the association of the house with the early temples is important. What I do consider to be peculiar is that there is no archaeological evidence which can be clearly identified as former houses which could be associated with a rich and powerful elite and yet such an elite must have existed to give form and order to the new, more democratic, more egalitarian society which we begin to identify in the Archaic period. We do have some evidence of ordinary houses for the poorer citizens, though this is very scanty, and Athens highlights the problem. Not too much is known of Athenian housing and the ancient documentary sources are virtually silent on ordinary housing, though reference has been made to 4th century B.C. orators who, on occasion, were to recall that in the great days of Athens the Athenians gave their all to the state and lived in houses of mud.⁵² Yet another opinion, related to the 5th century B.C., talks of the heart of the city crowded with blocks of mean little housing separated by tortuous alleys with spacious houses probably to be found in areas outside the city walls.⁵³

What has been found and gives us some information is a Geometric house and a votive deposit dating to the first half of the 7th century B.C. on the north slope of the Areopagus in an area approximately 10 metres square in a complex of Greek and Roman houses, streets and drains, close to the point where the Agora parted, to the Pnyx on the right and to the Acropolis on the left.⁵⁴ (See Figure 25)

The excavator, Dr. Dorothy Burr, uncovered the curved walls with approximately parallel fragments of walls joining them and she concludes the restoration of these walls would form an elliptical house of 11 metres by 5 metres, oriented east and west.⁵⁵ From the materials found it was concluded that the walls were probably of sun-dried brick resting on a stone base with a steeped thatched roof such as is represented on terracotta models of the late Geometric period.



*Figure 27: Athens. Geometric Oinochoe. No 37 with Neck and Handle restored.
From a Water-colour by P de Jong*

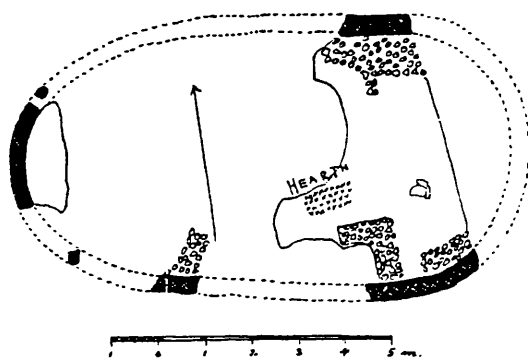


Figure 26: Athens. Plan of the Geometric House

As the evidence was insufficient no attempt at the placing of the door or reconstruction of the roof has been carried out.⁵⁶ (See Figure 26)

Within the western apse there stood a Geometric oinochoe and towards the centre there was an area showing a thin layer of burning and while there were no positive signs this probably indicates a hearth. There are four areas of peculiar erections of stones with level tops and the consensus of opinion is that these erections are benches or platforms for beds.⁵⁷ Towards the western apse there was a small grave with its upper level close to the floor of the house. This was the grave of a child about 4-6 years old and the artefacts buried with the child suggest the grave pre-existed the house.⁵⁸ On the floor at the eastern end were found two large irregular stones and a granite quern.⁵⁹ Also found in the area was a large votive deposit but as this is out-with the subject matter of this thesis I have not given it any consideration. What is amazing is that in spite of all the activity in this particular area over the centuries, as shown during the excavation process, these remains have survived to give us an insight, however slight, into how people lived in those days. (See Figure 27)

There is no doubt it was a house and occupied as such but the evidence of this dwelling is not in itself strong enough to suggest that all housing of the period was similar; however the hypothesis that this may represent the general standard of type and size of house in this period is not unreasonable.

At this period we see no evidence of formal planning as we understand it but a form of planning, if only accidental, is to be seen in the Agora and to a lesser extent the Acropolis. The Agora was an open space in a Greek city, usually close to the centre; its Roman counterpart is known as the Forum, and has sometimes been described as a market place. It may well be that the Agora started life as a market place but my view is that the Agora quickly assumed our perception of the Agora as embracing many if not all of the public functions of a city and also accommodated the social needs of the population. It was here that general meetings of the citizens were held, where the administration of State edicts were effected, where the politics of the day were conducted, where one bought and sold produce and goods, where financial affairs were transacted and where religion had its place in monuments and temples to the local deities such as Athena in Athens or Hera in Argos and so on. It was also the place to meet one's friends for social discourse, in other words, it was the heart of the city. The Agora in the older cities was an

undefined space, there were no formal boundaries but in this area there naturally came together, over the centuries, the buildings, monuments, temples, fountains, stoas and shrines necessary to encompass the foregoing activities, an accidental form of planning, yet one which met the needs of the City State or Polis. It has been said that throughout the public life of Athens religion and politics were closely intermingled ⁶⁰ and this can be seen in the functions of the Agora and the Acropolis in Athens.

What evidence we have strongly supports the assessment of the Archaic period as providing the base for so much which reaches full fruition in the Classical Period not least the acknowledgement for greater fairness, for order and codification of the laws to preserve such order. But this was not an Athenian led movement; it was occurring in other City States throughout Greece. The proliferation of temples and a common cult, one might say the official cult, is well attested as is the rapid progress in the development of building skills starting from the modest timber house or megaron to the use of stone, marble and tiles, skills long lost with the collapse of the Mycenaean civilization. Agriculture undergoes a renaissance, new skills are being developed in ceramics and sculpture and yet missing from all of this activity is evidence of the elite and rich in the shape of their houses, whether larger and more elaborate. Is this a reflection of the more egalitarian society which is developing ? There are still questions of the Archaic period to be answered.

Chapter 4

The Classical Period : 5th century B.C.

The demarcation of particular periods is, at best, an arbitrary procedure and this is true of the Classical Period which earlier academics determined commenced at the end of the second Persian war in 480-479 B.C. ¹ In the Temple of Aphaia at Aegina, a Doric temple, there are fragments of three pediments surviving which suggest a date of around 500 B.C., that is, in the Archaic Period, yet the replacement east pediment may date from around 480 B.C., the beginning of the Classical Period. ² Which Period claims the credit ? This is a good example of the intermingling of our arbitrary periods and this is supported in other areas of achievement and excellence in what we call the Classical Period. In literature, where perhaps the point is better made, it is argued that Greek drama has its starting point in Homer's *Iliad*, a fact recognised by Aeschylus who said 'We are all eating crumbs from the great table of Homer' ³ and Aeschylus himself is a prime example bestriding both the late Archaic Period and the Classical Period. He wrote over seventy plays, of which only seven survive; fortunately we have his trilogy produced when he was sixty-seven years old in 458 B.C. ⁴ Other examples are to be found in sculpting and vase painting bridging the two periods. Without any considered analysis here of the evolution of sculpting what perhaps clearly demonstrates the revolution in sculpting is the 'Kritian Boy', one of the overthrown monuments on the Acropolis, a victim of the Persian desecration of the Acropolis, which was subsequently buried and rediscovered in the excavations of the 1880's. The 'Kritian Boy' sculptor has abandoned the formal frontal style of the Kouroi, he stands in a natural position with the weight of the body shifted on to one leg with the corresponding adjustment of hips and shoulders. This is totally new and a most important step forward in the naturalisation of sculpture. ⁵ This is achieved in the late Archaic Period though as a style it undoubtedly flowers in the Classical Period. Similarly with vase painting techniques where the black-figure vases were first produced in Corinth in the late 7th century B.C., a technique which was adopted in Athens at the end of the century which eventually produced the best black-figure vases. Athens then invented red-figure vase painting about 530 B.C. and this was a major step forward. This technique allowed the artist greater expression in his work and by the end of the century the Pioneer Group of Painters was experimenting with a rendering of anatomy. ⁶ It is not only in literature and the arts that there is this blurring of the boundaries between the periods, we can see it in the democratic process which really begins in the Archaic Period. When the tyranny

of the Peisistratus family ended in 510 B.C. Cleisthenes, head of the noble house of the Alcmeonidae, with the general support of the people, introduced a new socio-political structure in 508/7 B.C. which, among other changes, gave greater political freedom and responsibility to smaller units of the population in Attica, known as 'demes' ⁷ In Aristotle's consideration of the Athenian constitution at this time he makes the observation that the constitution was much more democratic than that of Solon. ⁸ In the Classical Period in Attica the reforms introduced by Pericles meant that every citizen no matter to what class he belonged was recognised by the City State or Polis; he had the right to participate in the control and direction of public affairs and he was free to manage his own affairs in whatever manner he wished subject to the constraints of the law which he with his fellow citizens formulated. ⁹ It is recognised that the Classical Period saw Greek civilization reaching its peak in democracy, in painting, in sculpting, in ceramics, in the fields of commerce and finance, in agriculture and this extends also to architecture but so far as we know only in the design, construction and finishing materials of public buildings; not too much is known of the domestic house either of the rich, the merchantmen or the ordinary citizen; the emphasis was on public buildings, no doubt as a signal of Athens' increasingly dominant position in the Greek world following the Persian wars. As Plutarch describes it, the decision of Pericles to construct so many temples and public buildings was his greatest decision, - we may question his appropriation of the funds recovered from Delos - but Pericles was right in claiming that when the work was completed it would bring glory to Athens for all time. ¹⁰ There are tantalising glimpses of what may have been achieved in domestic architecture, for example, we know that Cimon is reputed to have turned his home into a place of public resort for his fellow citizens and provided a free dinner every day to any Athenian who needed it; this implies a large city house to cope with the numbers who no doubt availed themselves of his generosity. ¹¹ Or when Socrates, on his way back from Piraeus to Athens, is prevailed upon by Polemarchus to stay the evening with him. Reference is made to Cephalus, Polemarchus' father, who has just been sacrificing in the courtyard of the house, which must be of a substantial size to accommodate the various guests of Polemarchus. ¹²

What we do know of domestic building in Athens in the 5th century B.C. suggests that planning of residential areas simply did not exist but this is not surprising given the antiquity of Athens, even in the 5th century B.C. The general description of what we would term 'inner-city' housing is of mean little houses, poorly constructed with foundations of rubble supporting a low rubble socle carrying walls of unbaked mud bricks, covered with stucco to protect them from the rain,

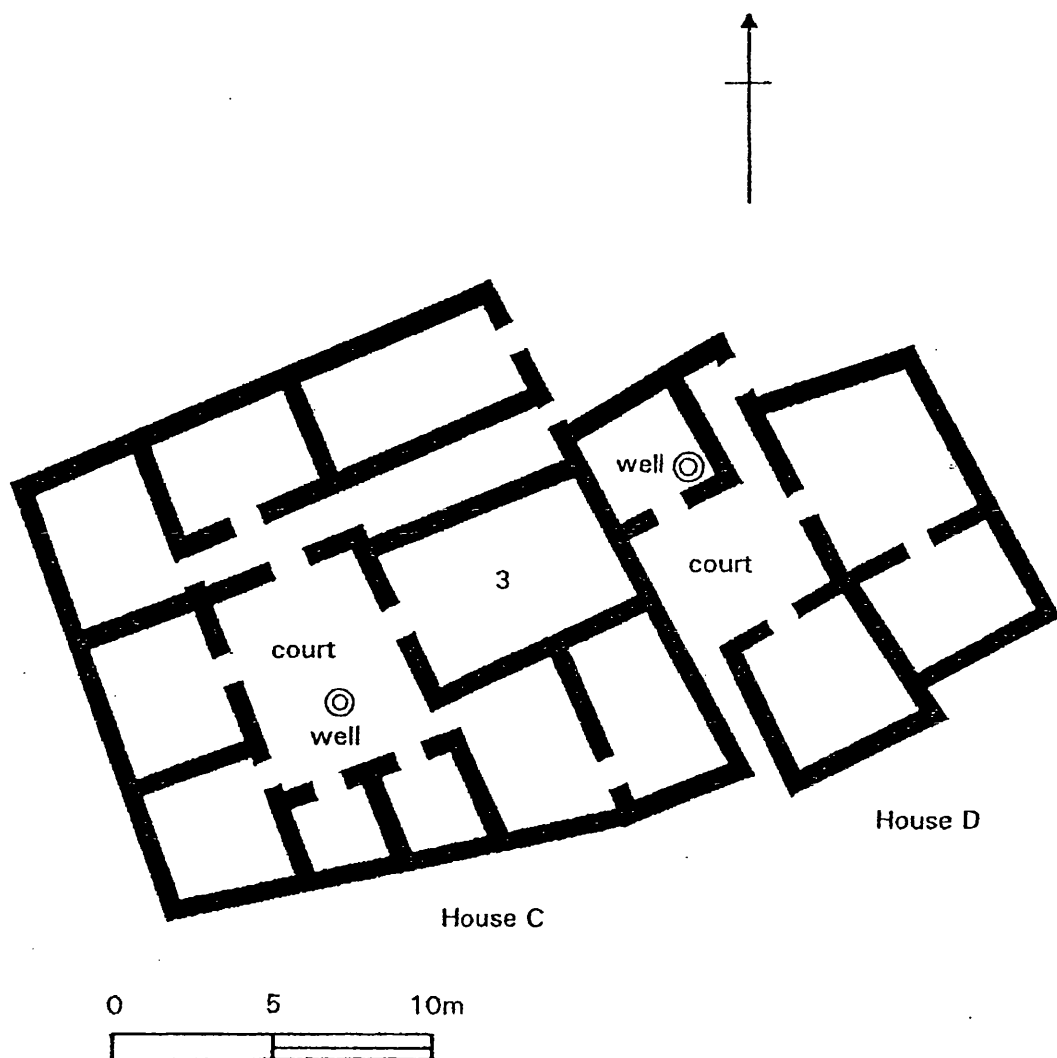
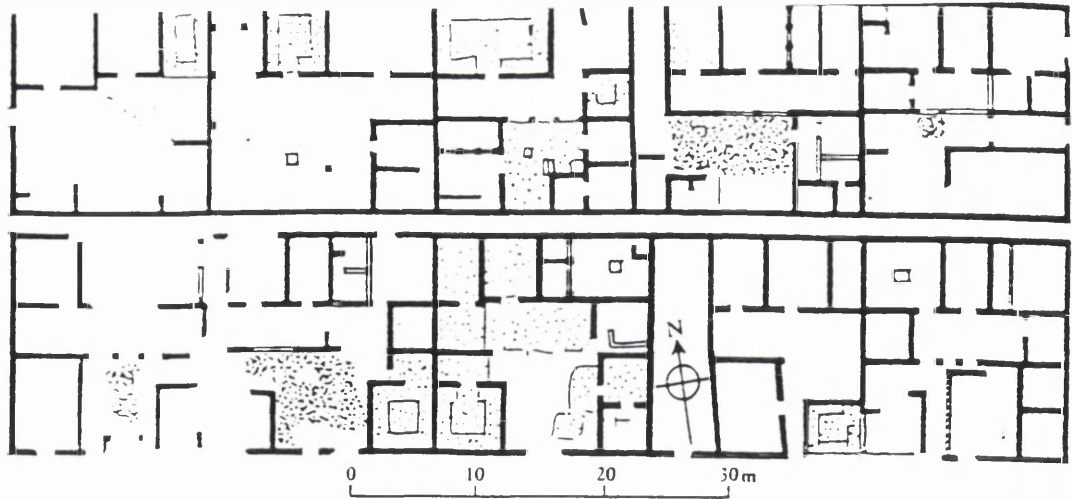


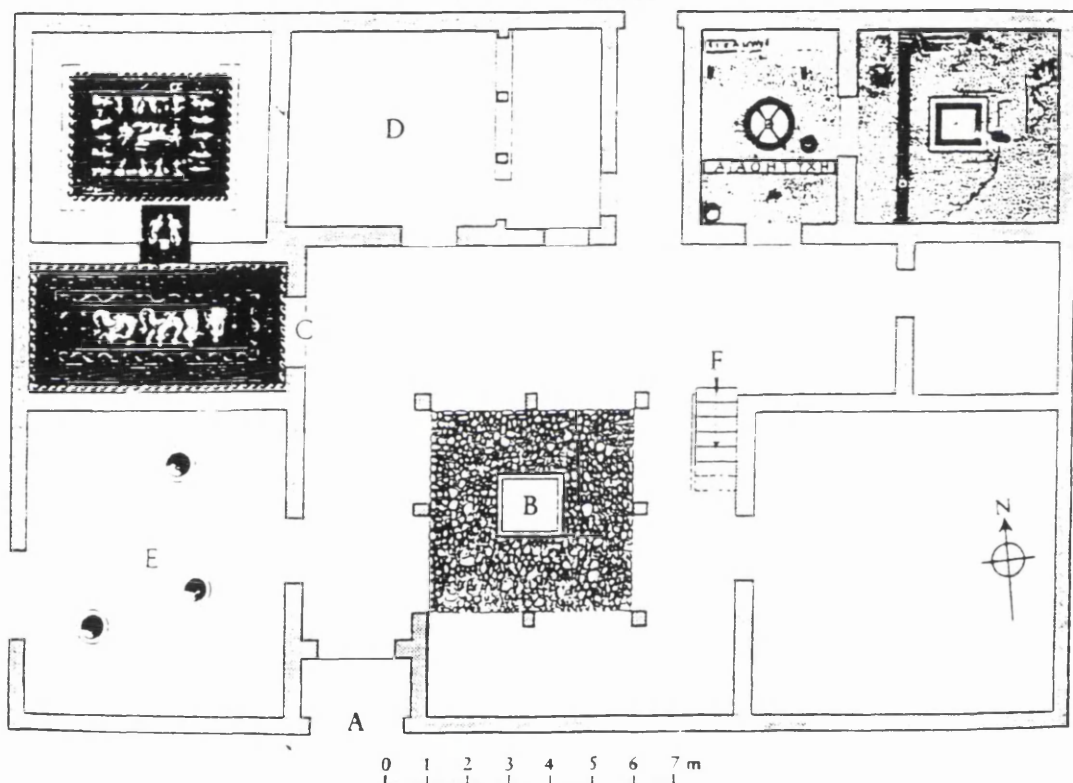
Figure 28 : Plan of the houses near the Great Drain, Athens

and timber framed roofs covered with terracotta roof tiles. They shared party walls and formed streets which were little more than alleyways but with no sense of order. ¹³ The evidence we have neither supports nor refutes that description though the evidence itself is, in part, deficient. One group of houses, at the north foot of the Areopagus, dating to the fifth century B.C., where it is not known or extremely difficult to determine the exact number of houses, was arranged in two rows, back to back with no separating alleyway. These houses varied in size and most of them appear to have small courts but they are not comparable to the later housing found at Olynthus. ¹⁴ A further two houses were discovered near to the Great Drain and these are much larger. House C has an area of approximately 225 square metres and contains ten rooms of varying size together with a central court. One room seems only to have access from the street and it is suggested this may have been a shop. House D is smaller having an area of approximately 130 square metres containing four rooms and a central court. The main entrance is on the north-east side but this house seems to have a back door, on the south side, a feature of some of the houses at Olynthus. ¹⁵ (See Figure 28) There is another group of three houses on the Areopagus originally constructed during the early fifth century B.C. but the remains were too fragmentary to reconstruct the original buildings and what we have are the remains of subsequent late fourth century B.C. date. ¹⁶ The evidence is very limited and does not provide a sound basis to express a general view of housing in the fifth century B.C. in Athens.

While what evidence we have of domestic structures in Athens leaves us with as many questions as it answers it is clearly wrong to look only at Athens as presenting a picture of domestic dwellings in the Classical Period. That any of the cities which were of any significant age would, like Athens, be a disorganised collection of buildings with housing filling whatever gap sites existed seems most likely but this is not the whole picture. What is certain is that formal planning, again a development in the late Archaic Period, is more actively deployed in the establishment of new cities or the rebuilding of old cities destroyed by war, in the Classical Period. At Old Smyrna, in the 9th century B.C. excavation uncovered evidence which suggests that group or axially planned housing was attempted but this seems to have been an experiment which was not continued. ¹⁷ There is comment on the uniform orientation to be seen in several parts of the city and the conclusion is, therefore, that the streets must have run straight. ¹⁸ I have already drawn attention to some form of planning in the housing so far excavated at Zagaro in the 8th century B.C. where the evidence suggests a tendency to straight alignment and the rectangular rooms are in groups. ¹⁹ These are fairly tenuous strands of evidence to support the



A street 'block' of fourth century BC houses at Olynthus in north Greece
There is some variety in the basic scheme of entrance to a courtyard from which there is direct access to living rooms, bedrooms (upstairs), and the men's dining room (andrōn). Compare the more elegant villa at Olynthus shown in the next illustration.



The Villa of Good Fortune at Olynthus, fourth century BC
The main entrance (A) is into a verandahed courtyard with a central altar (B). The men's dining room (andrōn) is reached from it through an anteroom (C), both with mosaic floors. The kitchen is adjacent (D) and the sunken store-room (E) can also be reached from a side street. At the east are workrooms and the stairs (F) to the upper floor (bedrooms and women's rooms). This area also has access from a back door, while the main door leads directly to the dining room, leaving the women's quarters separate, though not secluded.

Figure 29

concept of some sort of planning early in the Archaic period though it seems to me that a logical assumption which can be made is that attention was turning to the problem of closely built or even packed housing and to the environmental problems arising from such conditions.

It is in the Classical Period that we see formal planning which made due allowance for the necessary public buildings such as temples, administrative buildings, the Agora, theatres and gymnasiums while providing usually rectangular blocks of more or less regular size to accommodate housing. The planning took the form of what is known as the gridiron or chessboard system where streets ran usually north to south and were crossed by streets running east to west at right angles. The major streets were differentiated by being somewhat wider and usually terminated at gates in the defensive wall if one existed. Perhaps the best example so far excavated is Olynthus in Chalcidice where we can see orthogonal planning has been implemented on the north hill where development began after the middle of the 5th century B.C. most likely about 432 B.C. and, importantly, we have excavated evidence of housing within the blocks constituted by the gridiron system.²⁰ The south hill was the older part of Olynthus and shows no evidence of any sophisticated planning; the entire city was destroyed by Philip of Macedon in 348 B.C. There was reoccupation of part of the site before the final abandonment in 316 B.C. so the claim is that the street plan is of the 5th century B.C. origin but that the houses in their latest phases are 4th century B.C.²¹ The blocks were each divided into two sets of five houses, with a narrow passage or alley, probably intended mainly for drainage, dividing the sets. The blocks were rectangular and measured some 300 x 120 feet.²² There is a variety of entrances to the houses which are roughly square and divided into approximately equal north and south parts. In the northern part was a long narrow room, the so-called *pastas*, with a series of other rooms opening on to it from the north and on the south side was a courtyard, usually with a cobbled surface, possibly containing a cistern and/or an altar. The houses mainly faced south, this was true also of the houses on the north side of the block, thus excluding the north winds and catching the winter sun.²³ On the ground floor was the *andron*, the men's dining room, and stairs from the courtyard would give access to the bedrooms on the first floor. (See Figure 29)

Construction was still of unbaked brick, which perhaps had a protective coating, on a foundation of rubble with timber framed sloping roofs with a terracotta tile finish; pillars were mostly of wood. Apart from those houses which had cisterns the occupiers would have depended on the city fountains for a supply of water; there were no effective sanitary arrangements.²⁴ Olynthus is

important because it provides a great deal of information not only on the gridiron system and its effectiveness in allocating ground for use of the city to the benefit of all the citizens and for residential use but also in the variety of houses we find. While each residential block provided the ten house plots, each roughly square, each roughly of the same size, the layout of the house while based on the pastas and courtyard reflected the requirements of the occupiers in the allocation and distribution of the internal space. As the excavators are reputed to say 'The underlying principle is one of growth by division rather than accretion'.²⁵ The system was also flexible in that larger houses could be accommodated within the block simply by acquiring two or more house plots or in the case of a very wealthy citizen possibly even acquiring a whole block to be developed as a single house. What we certainly have at Olynthus is a large group of houses exhibiting individual styles of layout enjoying a modest degree of comfort free from any ostentation but reflecting the occupiers' moderate means. As R.E.Wycherley says "One would like to feel that they fairly represent the fifth and fourth century Greek house, and since they have as strong a claim as any to do so, I have described them in some detail; but one cannot be sure."; a view which, somewhat reluctantly, I share.

What is of note is the incorporation of the courtyard in the design of the houses at Olynthus, no doubt as a measure of privacy and protection but perhaps also required to give a degree of comfort from the temperate climate. The courtyard, it is argued by Theodore Fyfe, is an early Mediterranean form of plan which is to be seen in the 'Little Palace' of Knossos which may date from about 1500 B.C.²⁶ Yet as I have already mentioned there is evidence of courtyards at Çatal Hüyük (6500-5700 B.C.), at Myrtos (2600-2200 B.C.), at Mycenae (1400-1200 B.C.) and it seems entirely feasible to me that the courtyard, like the megaron, is a basic essential of the house which, in one form or another, has continued down through the ages.

The Classical Period in Greece saw a fulfilment in the achievements and products of man in many fields and while each field has its own accomplishments and makes its own contribution to society it is to literature and the ability to write that we owe a debt in our pursuit of knowledge of this period. The written record, while not infallible, does provide us with information or, at the very least, clues and in architecture and planning we are able to begin to identify individuals such as sculptors, architects and planners. These individuals are a vital part of the dynamic of the age, indeed, of all ages, and while they may be subservient to the client or the State it is their skill and foresight which has created those elements which constitute what we call the Classical

Period. This thesis is concerned with both the house and planning and it may be that both planning matters and designing of buildings were perhaps in those days functions to be found in the same individual. What may be termed the first town planner we can identify, though not without real doubt, requires some consideration. The individual credited by the ancient sources with the introduction of the gridiron or chessboard system is Hippodamus of Miletus and our principle authority is Aristotle who describes him as the first man who attempted, without practical experience of politics, to formulate the best form of constitution. He goes on to describe him as the man who invented the planning of towns in separate quarters and laid out Piraeus with regular roads,²⁷ but there is no mention of any architectural ability.

If we accept that Miletus on the coast of Asia Minor, was the first city to be laid out on the gridiron system it did represent the most logical way of parcelling out the land between the various interests. It satisfied the public requirements for temples, agora and all the other institutions which at that time were associated with cities. It met the housing requirements of the survivors of the original sacking of Miletus by the Persians in 494 B.C. together with the demands of whatever incomers there may have been. Excavation shows the city was laid out on geometric lines, the work beginning in 479 B.C., fifteen years after the destruction of the original city and following the battle of Mycale in 479 B.C. giving final victory over the Persians.²⁸ The problem is we do not know enough about Hippodamus other than that he was a Milesian; we do not know when he was born nor do we know when he died. General opinion suggests he was born in 480 B.C. or earlier though Von Gerkan pushes his birth back into the 6th century B.C.²⁹ Again, it is Aristotle who sheds some light on Hippodamus and his character but we must be wary as Aristotle may well have been biased given his obvious dislike of Hippodamus' proposed constitutional reforms. He describes Hippodamus as being eccentric to attract attention, he wore his hair long and expensively adorned : he wore flowing robes, made from cheap material, in both summer and winter and he had pretensions to be learned about nature generally.³⁰ What seems beyond doubt is that Pericles employed him to lay out the port of Piraeus which served Athens and at or about the same time , 434 B.C., he was involved in the layout of Thurii in southern Italy. It is difficult to detect his work in Piraeus and Thurii is lost to us under water though Diodorus tells us that there were three streets one way and four the other.³¹ There can be little or no doubt that Hippodamus was not the inventor of the gridiron system but as a young resident of the new Miletus he would have been conversant with the principle of the system. On moving to Athens it would be obvious to him, given what we know of the Athens of that time,

the advantages which the geometric system enjoyed in relation to the old way of haphazard growth. There is no evidence to suggest that he brought his own ideas to improve the system but bearing in mind Aristotle's views of him it may well be that his ideas of three social classes, three divisions of territory and three sorts of laws would, in some manner, be reflected in his concept of the gridiron system.³²

I have previously referred to possible attempts at Old Smyrna and at Zagaro at some sort of planning reflecting a possible orthogonal system and while I have also admitted that this is very tenuous evidence it does seem to me that a society capable of the architectural advances which were made in the Archaic period from the end of the 8th century B.C. onwards would also begin to question the layout of cities. On environmental grounds alone it would be imperative given the introduction of drains in some communal form. There is also the argument as to whether the grid system is a Greek or Roman invention but this is an argument which seems to me to be pointless and of no real merit. The Roman variation does differ from the Hippodamic geometric version but there are variations in the geometric version in the various Greek interpretations. I will reserve my comments on the Roman system to later in this thesis.

Chapter 5

Italy : The Dark Age : Archaic Age : The Classical Period.

A comparison c1400-500 B.C.

While the main area of activity was centred on Greece and in particular Athens, the Aegean, Asia Minor and to a lesser extent the eastern Mediterranean a new civilization, a new society was putting down roots in Italy, partly contemporary with the latter part of the Mycenaean civilization. This civilization has parallels with the commencement and duration of the Dark Age in Greece, in that the beginnings are shrouded in mystery and yet a number of theories have been advanced to explain where the Italic people came from if they were not an indigenous people. While it does not directly impact on this thesis I do think we should be aware of the theories which excite such passionate support and equally passionate denunciation. One of the earliest theories was an invasion from north of the Alps, the north-south movement; another theory was the movement from the Aegean, the south-north movement, and based on a relatively autochthonous people evincing an earlier Mediterranean culture and then there is the theory of invasion coming from the Balkan and Danubian regions, the east-west movement. Each of these theories in some respects have credibility but each also has its weaknesses as Massimo Palottino has so clearly shown in his book *The Etruscans*.¹ Effectively the debate is at a standstill.

That there were various sub-cultures has been established and it is on one of those sub-cultures I wish to concentrate, namely, the Terramare. The Terramare form a part of the earliest theory, the north-south movement, as they were identified with pile-dwellings which compared to the lake-side dwellings found in western Switzerland² but in Italian territorial terms they were confined to northern Italy. The Terramare established settlements, based on the evidence we have, in an area between the Po and the Apennines with Bologna at the eastern end and Piacenza at the western end, yet other Terramare settlements have been found north of the Po near Mantua.³ Another opinion suggests that they have moved south from the Danubian plain where they had at some time dwelt in lake-villages and that they continued the lacustrine fashion of their former homes in the Terramare settlements.⁴

A settlement of some interest is that of Castellazzo Di Fontanellato lying some twelve miles to the north-west of Parma. This settlement is famous but for all the wrong reasons. It was first

excavated in 1889 by Luigi Pigorini, a distinguished anthropologist, and his motives were sound; he was aware that the Terramare settlements were being ploughed out of existence and he was concerned to examine such sites and obtain what evidence he could of the Terramare people. His second motive, which led to his downfall, was his belief that the Terramare were the ancestors of the Iron Age Villanovan culture and that they were the ancestral beginning of the Roman people.

If we ignore what have proved to be the wilder assumptions of Pigorini based on his findings there are a number of facts which can be accepted even given the unscientific nature of the various excavations which Pigorini conducted. The vestiges of the settlement occupy an area of about forty-three acres which is trapezoidal in shape with the habitated area a little less than thirty acres in extent. He argued that the settlement's defences were strong and constituted a solid earthen rampart fifty feet broad at its base, strengthened with timber, which enclosed the settlement. Out-with the rampart he claimed was a wet ditch one hundred feet wide, fed with fresh water from a neighbouring stream by an inlet at the south-western corner and emptied by an out-fall on the east boundary. Finally, at the southern end of the main street was a wooden bridge over the wet ditch which was the only access and egress to what in effect was an artificial island. Further investigation of the site has shown that this was an exaggerated claim yet Pigorini did find post-holes and piles and had them photographed.⁵ Perhaps his wildest claim was that the layout of the settlement in a grid system was the forerunner of the later Roman *Castrum*, a claim difficult to properly substantiate given his apparently random method of digging trenches rather than continuous trenches across the site which would have permitted him to properly trace a ground plan based on fact. Another factor militating against him was the swampy nature of the site, the constant seepage and mud, conditions in which any system, orthogonal or otherwise, would have difficulty in surviving. Even allowing for the poor conditions there was evidence, even if sparse, found including pottery, axes, pins, daggers and razors relating to a Bronze Age culture. What is missing, and we must remember he was an anthropologist not an archaeologist, are reports of the levels at which these artefacts were found but this is a common occurrence in most Terramare sites where continuous farming has thrown the various levels into confusion.⁶

He subsequently claimed to have found a small 'citadel' - an *arx* or *templum* - within the settlement on its east side which had its own ditch, rampart and bridge access and found within this 'citadel' were a trench and five pits, which were each equipped with a wooden cover, for the

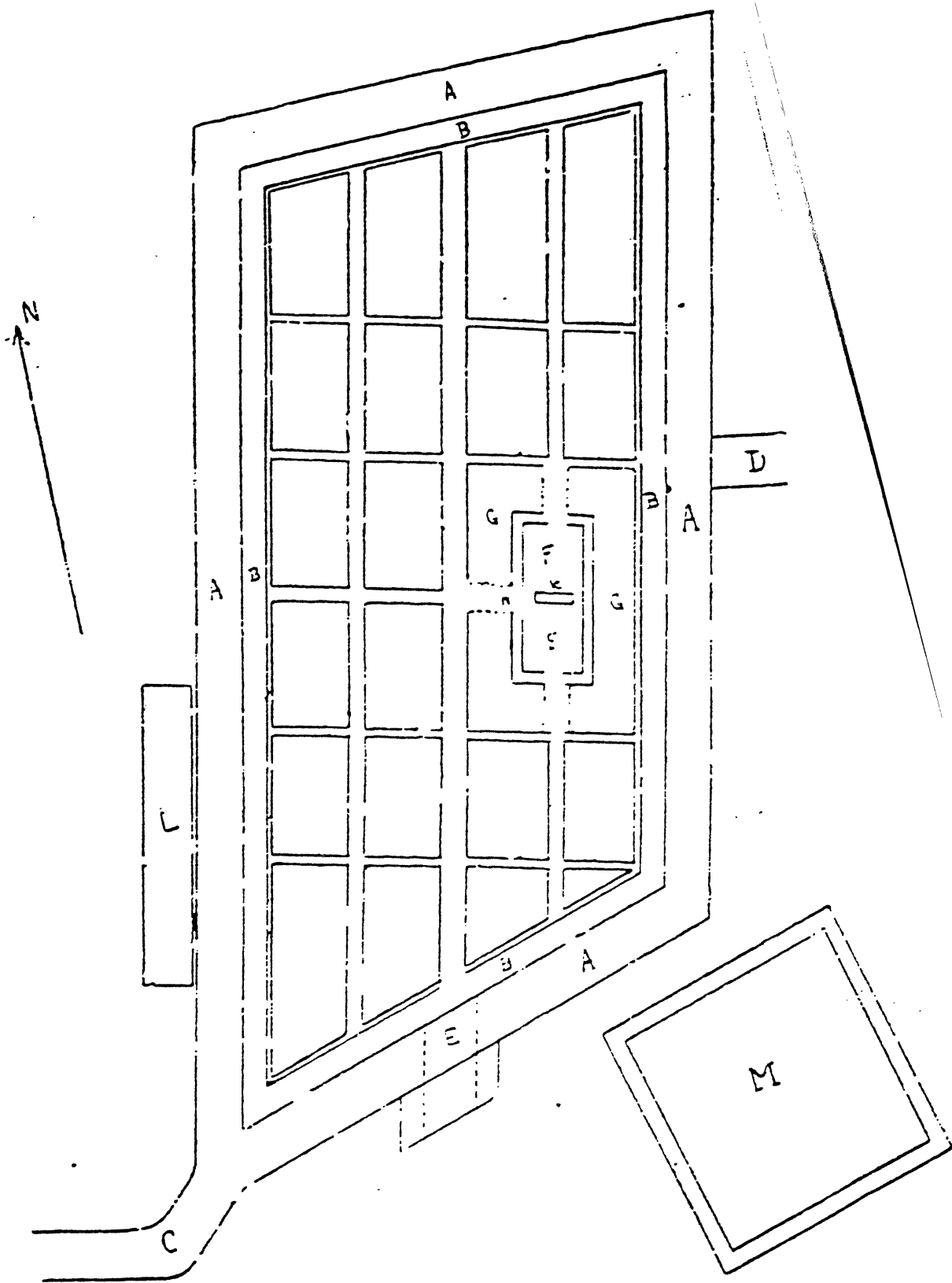


Figure 30: Terramara of Castellazzo di Fontanellato

deposit of sacrificial fruits. ⁷ Out-with the wet ditch and beyond the settlement were two necropolises, one adjacent to the wet ditch on the west boundary and the other, the larger, some thirty metres from the wet ditch at the south-western corner of the settlement. He found platforms of urns which were set curiously like the village itself together with a little burning ghat. ⁸ (See Figure 30)

The Terramare belong to the Bronze Age and are contemporary with the Mycenaeans of 1400 B.C. and later and while we have no definitive dating for Castellazzo Di Fontanellato there are aspects of this settlement which should not be ignored because of the exaggerated claims of Pigorini. As I have said Pigorini was an anthropologist and his primary aim was to establish an Italic ancestry for the Romans and for him the Terramare must have seemed the base he was seeking; he was not an archaeologist and detailed accuracy was not his forte but Castellazzo Di Fontanellato was a Terramare settlement, it did exist, and the Terramare were a significant subculture which arrived in northern Italy probably as part of the north-south movement. There are interesting features of this settlement which merit consideration and the location of the religious centre whether one calls it a 'citadel', arx or templum, seems certain based on the Pigorini finds and the assumption that this would have been the focal point of the community seems logical; it would give expression to the beliefs of the community. It is perhaps going a step too far to compare it with the later Roman Forum but there is a similarity.

The placing of the necropolises outside the settlement is itself a form of environmental planning perhaps based purely on hygienic grounds but, again stretching a point, there are similarities to the future pomerium or sacred boundary where the Laws of the Twelve Tablets, the first attempt by the decemvirs in 451-450 B.C. to regularise older unwritten laws of custom, ⁹ forbade burial or cremation within the sacred boundary though there was no absolute or religious prohibition as exemplified by the Vestal Virgins in Rome who could be buried in their atrium in the Forum Romanum. ¹⁰

It is a matter of regret that we have so little information relating to the Terramare on which to base considered opinion but what we do know must not be ignored as a result of Pigorini's generalised and overly ambitious conclusions. It is known that rectangular or square plans have been found in Terramare settlements, modern investigators enumerate ten, but their layout was flexible with many sites being oval in shape. ¹¹ It may well be that Pigorini identified some sort of

rectangular plan at Castellazzo Di Fontanellato but his evidence is questionable. It is difficult to interpret these prehistoric settlements given the scanty evidence we have and it is even more dangerous to generalise as Pigorini did but conversely we cannot dismiss or ignore what little evidence there is available to us.

The Terramare people are like earlier civilizations having an agricultural base but with what seems to be a more sophisticated approach to communal life and what we possibly have in Castellazzo Di Fontanellato is an apparently integrated community occupying a probably defended site in what seems a planned settlement which excludes their dead and where their beliefs are practised in a central position within the settlement. There is no evidence yet available to suggest a Greek or Oriental influence either in their planning concept or their culture but equally we know of no link or continuity with the subsequent Villanovan culture or the later Etruscan civilization with one possible exception, the city of Marzabotto, which I discuss below. In only two features is there an apparent form of continuity and that is in the siting of necropolises beyond the perimeters of the settlement and the cremation of their dead, features which are common to the early Villanovan culture. There are those who argue strongly that the old theories about some Italic influence coming from the Terramare and Etruscan cultures, the Etruscans having assimilated the Villanovan culture, on town planning must be abandoned, the argument, in part, upheld by Castagnoli's analysis of Pompeii and Marzabotto, an analysis which has the strong support of Axel Boëthius who refers to the 'imaginary Terramare'.¹² Axel Boëthius acknowledges that the traditions of the old villages which predate the 'new' Rome of the 6th century B.C. may have lived on and he gives as an example the shepherds' huts of the type shown on Roman sarcophagi and which still exist today,¹³ but his argument is that there is no evidence, archaeologically, of any discernible Italic influence. This is to deny any indigenous contribution by the Etruscans to the development of their own culture, a culture which reached its zenith in the 6th and 5th centuries B.C. and played such an important part in the creation of the 'new' Rome.

Like many other subcultures the Terramare simply disappear or perhaps more likely were integrated with successive waves of incomers. What is certain is the appearance of the Villanovan culture, so named after the modern Villanova, and given their distinctive two storied burial urns they have been linked with the great Urnfield culture based in what is now Romania,¹⁴ but beyond that there are no other definitive links. We are now in the final phases of the

Bronze Age and at the beginning of the Iron Age but we are still plagued by lack of information on the Villanovan peoples apart from their famous pottery. ¹⁵ The view has been expressed, based on excavations and what finds there are, that they were an agricultural people who lived in small villages, they did not have any major urban centres that we know of, and the absence of any fortifications would indicate they were a peaceful people and free from concern of attack from enemies. ¹⁶ There are still differences of opinion as to when the Bronze Age came to an end, those opinions ranging from the 10th century B.C. to the 8th century B.C., Massimo Palottino's view is that it ended in the 9th century B.C., ¹⁷ but there is general agreement that in the mid 8th century B.C. are seen the first certain dates signalling the beginning of historical times with the first Greek settlements at Ischia, Cumae and in Sicily, events which were contemporary with a fairly advanced phase of the Iron Age cultures of Etruria, Campania and Sicily. ¹⁸

The Villanovan culture was subsumed by what we now call the Etruscan culture; there can be little doubt that there was an influx of people with radical ideas though from where, as I have pointed out, we really do not know. This may well have been a peaceful invasion and over a period of time, certainly the archaeological record shows no sign of a violent intrusion such as that experienced by Greece in the Dark Age. They brought radical ideas and skills which, grafted onto the Villanovan culture, give us the Etruscan people and their culture. Urban communities became the norm, they were strategically located, cremation replaced inhumation, they developed their religion, their literature and art and architecturally their achievements can be seen mainly in monuments and tombs; it is clear that Phoenician and Greek influences were at work. What I want to consider is what may be termed an anomaly, a city which is like no other of its contemporaries and one which seems to be before its time in a planning concept. I refer to Marzabotto.

Marzabotto is so named because it lies just south of the modern Marzabotto on the east side of the river Reno, and Massimo Palottino suggests its ancient name may be Misa. The site is relatively flat and one that is not readily defensible which suggests it was a time of relative peace in the area. It sits on what was one of the main routes across the Apennines into the Po valley leading to Bologna (its Etruscan name was Felsina) at a distance some fifteen miles south of Bologna and it was known as the salt route bringing salt from the coast to the inner reaches of the Po valley. It is out-with Etruria proper but there seems to be no doubt it was an Etrurian

city. Unfortunately, the southern part of the city has been washed away by the river Reno and this leaves a slight problem in determining the southern limits of the city.¹⁹

There is some uncertainty in the dating of Marzabotto though Axel Boëthius seems in no doubt that it is properly dated to the 5th century B.C.²⁰ but this opinion is not shared by Luisa Banti who suggests that Marzabotto came into being at the beginning of the 6th century B.C. as a centre which worked iron. The remnants of a foundry and iron slag have been found in Marzabotto and the source of the ore has been identified as a mine in the Apennines, a mine whose existence was still known in the Middle Ages.²¹ The proposed date of the 6th century gets some support from the artefacts recovered during excavations which have datings from the sixth to the fourth centuries B.C. One of the more regrettable side effects of the Second World War is that much of this material, which was kept in the private museum of Villa Aria, was considerably damaged during the war.²²

It was F. Haverfield who acknowledged that further excavation was needed to learn more of the plan of the city though he drew attention to the fact that four of the seven then known house-blocks measure just under 120 Roman feet in width and thus approximate to a size met elsewhere in the Roman world; he also suggests Marzabotto was an early blend of Greek and Italic methods.²³ Because of recent excavations we now know much more about this ancient city and we are able to take a more positive view but one which supplants a number of previously held views on Marzabotto. Its orthogonal layout was presumed from the findings of the earliest and very limited excavation but that orthogonality is now clear, it has a main street running north to south (the *cardo*) and three main streets running east to west (the *decumanus*) which meet at right angles. The *insulae* blocks are formed by a series of narrower streets running parallel to the *cardo* but always intersecting the *decumanus* or *cardo* at right angles. At the intersection of the *decumanus* and the *cardo* a large pebble was found buried below street level, though which intersection has not been identified; it had two grooves cut on the top in the form of a cross and it is claimed by Luisa Banti that this stone marks the centre of the urban system. Three other cippi were found at the crossing of other streets buried in a similar fashion.²⁴ The streets had cobbled pavements with deep drainage ditches running down the streets covered with stone slabs.²⁵ On the slopes of the acropolis leading down to the city there was an elaborate water system having a central cistern and distributing channels; the drainage of the whole city has been described as remarkable.²⁶

Marzabotto provides us with an insight to the social and religious activities of the citizens even though the sources of information are fairly scanty. It is argued that from the very beginnings of Etruscan civilization the ancient round or oval dwellings of Italian prehistory were giving way to the house of rectilinear plan and this certainly seems to be the case as shown by the excavations at Marzabotto.²⁷ The blocks created by the grid system are rectangular insulae much longer in the north-south direction than they are wide. Many of the houses are approached by a long corridor below which was a channel or drain which discharged into the main channels below the street. The corridor gave access to a central inner courtyard around which were arranged the houses and rooms.²⁸ Massimo Palottino argues that the house originally consisted of a rectangular building consisting of one room and he sees this type of house as forming the basis of the Mycenaean megaron and of the Greek temple, a type which he argues spread by the land route.

The house foundations which survive are made up of river stones bedded in mud,²⁹ their walls of partly fired brick roofed over with wooden beams covered with tiles which seem to have been large; many tiles of good quality clay three feet wide have been found. Several of the buildings on the main north-south street were a combination of dwellings, shops and manufacturing areas, tools and quantities of iron-slag were found,³⁰ and this in the centre of the city. A potters' quarter has been found on the west side of the main north-south street but a little north of the city centre, where the pattern of combined dwelling and manufacturing areas are continued.³¹ From the evidence available to us it seems that Marzabotto situated on the 'salt route' had an important industrial role in smithing, smelting, brick, tile and pottery production and given its location this is not surprising in that, from purely an economic view, the ability to trade and distribute their produce existed on their doorstep.³²

It is a reasonable hypothesis that Marzabotto was laid out on a distinct orthogonal plan that was defined by ritualised rules which provided formalised bounded areas for the acropolis and the cemeteries all out-with the city.³³ Excavation on the acropolis shows clearly it was the religious centre with temples and altars which were in alignment with the buildings in the city at some sixty feet lower on the main level terrace.³⁴ Vitruvius describes the Etruscan temple as being slightly longer in length (six parts) than width (five parts) and internally comprising of half for the sanctuary and half for the portico. The sanctuary, across its width, is divided into ten parts

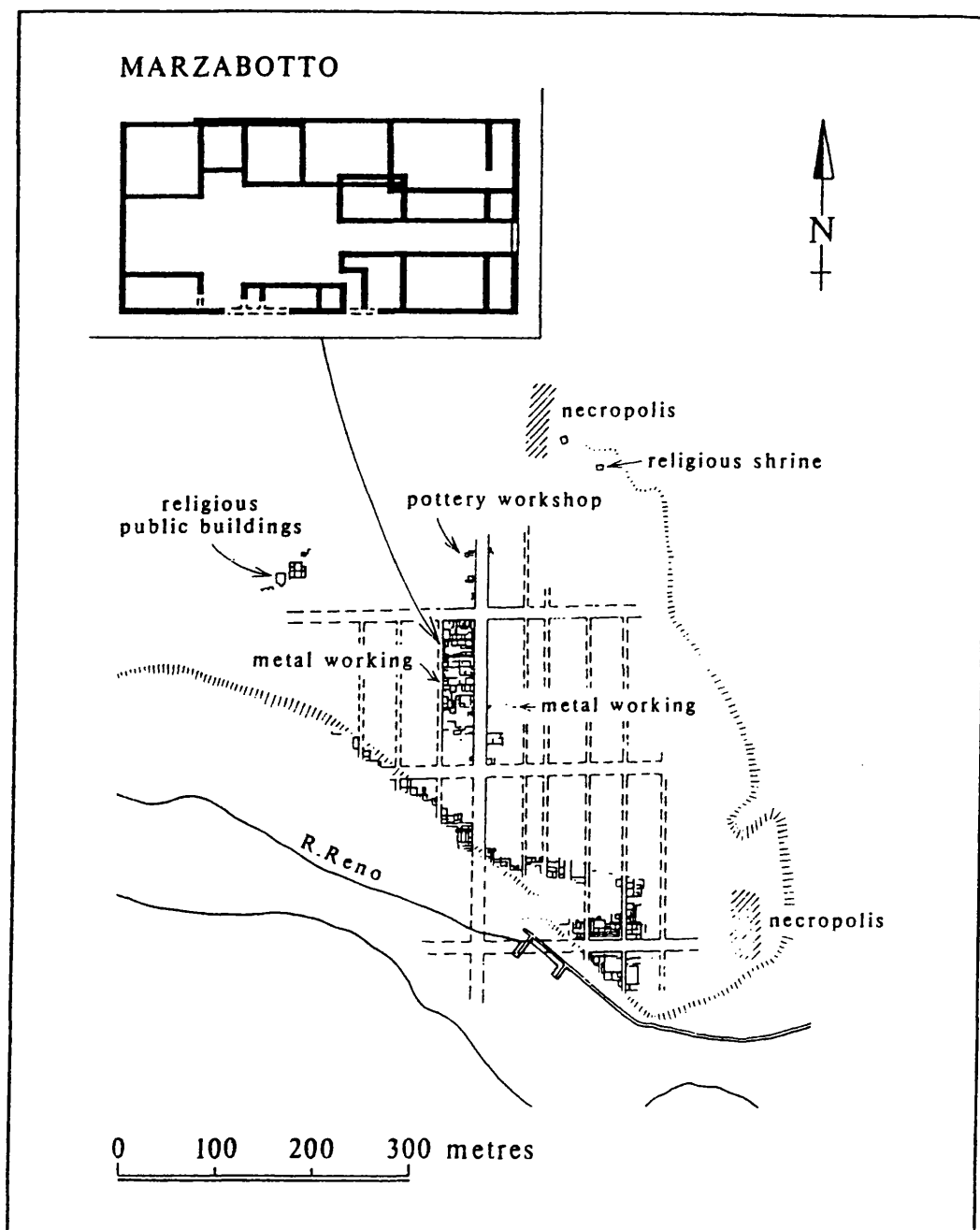


Figure 31: The fifth century of Marzabotto showing functional layout including a detail of a domestic quarter (after Mansuelli 1972)

with three parts each to the wing sanctuaries, that is, on left and right, with the main or central sanctuary consisting of the remaining four parts,³⁵ thus a front half comprising the colonnaded portico and the rear half of three cells or one main cell flanked by two alae or open ambulacra. The point has been made that the 6th century B.C. tombs at Cerveteri present a form of plan that may to some extent be the forerunner or ancestor of the Italic or 'Pompeian' house with, among other features, the sequence of rooms at the back which could be one or two or three rooms covered by a gable roof but where the three roomed type became the most usual and in this design its resemblance to the Etruscan three cell temple is significant.³⁶ I think this is a fair assumption to make and one which is comparable to the Greek megaron; the relationship of domestic dwelling to the temple is notable not only because it emphasises the close link between the house and the temple but it illustrates the belief of the peoples of these times: the temple is a house and the house is a temple.(See Figure 31)

Marzabotto is an enigma and one which in spite of our more extensive knowledge following recent excavations remains with us. We do not know of any other Etruscan city which has a geometric layout with the possible exception of Veii, though here it was not a geometric design but more radial in design, and Spina located on the Adriatic sea on the north-east coast of Italy. There are divisions of opinion on whether Spina was an Etruscan foundation or a Greek foundation. One view is that it was a Greek foundation where the Etruscans established a strong foothold³⁷ but the opposing view is that at Cerveteri and Spina the Greeks, who were keen to acquire unworked metals from Etruscan mines, such as copper, lead and iron, established Greek merchant colonies for such purposes.³⁸ Whatever is the correct assessment, and I tend to favour the Greek merchant colony argument, there is no denying the Greek influence on the Etruscan city/port of Spina. What is peculiar to Spina is that its grid system was composed of waterways and in some respects it resembles Marzabotto, the 'main' street is a canal some sixty feet wide leading from a harbour to the sea and there was a grid of parallel and intersecting waterways, on a rectangular 'chessboard' pattern. From aerial photography it is calculated that the area of habitation extended to over 740 acres. From the excavation of two large cemeteries which were found and the artefacts recovered they demonstrate that it was a wealthy city with extensive overseas contacts but, as yet, we have no knowledge of housing or temples.³⁹

Consideration must also be given to the finding of an iron foundry and iron slag at Marzabotto. It is known that there exists a pattern of movement by the Celtic peoples north of the Alps and

we know that the Celtic peoples were skilled and artistic metal workers. R.M.Ogilvie postulates that there was a steady migration of Celts to the Po valley during the 5th. and 4th. centuries B.C. and also records that Celtic metal-work has been recovered from 5th century B.C graves at Marzabotto but qualifies this by claiming that these need not necessarily signify Celtic graves but be merely the stray products of trade. ⁴⁰ Of interest to me is one further claim by R.M.Ogilvie which is that the Celts absorbed the culture of the communities where they settled and their own distinctive Celtic features immediately disappeared; that the migration was slow and piecemeal and that they had evolved two and four wheeled vehicles for ease of transport of goods. All this is apparently based on the observations of Caesar three hundred and fifty years later that the Celtic practice was to grow a year's crops and to graze a year's pasture and then to pass to a fresh region. ⁴¹ He also reports that a concentration of small Celtic huts have been found in the north part of the city but the information he provides on this find is minimal. I think his hypothesis is interesting but in part open to challenge particularly on the question of losing their identity or culture as the evidence provided by their metalwork artefacts recovered would tend to dispute this.

Because of the strong Greek influence which can be seen in the Etruscan culture many scholars have accepted that Marzabotto was a combination of Greek and Italic planning, a coming together of the two cultures with the Greek influence uppermost. If Greek influence was so strong why do we not see more geometric patterns in the other Etruscan cities ? What may be of interest is that Marzabotto is approximately only some 60 miles south-east of Castellazzo Di Fontanellato which I have suggested is possibly the first proto-orthogonal settlement of which we know. Again, lack of vital information such as dating frustrates our knowledge but if Hippodamian ideas can travel so far from Miletus to and then from mainland Greece, a short hop of some 60 miles does not seem beyond the bounds of possibility.

There are features which are common to both : a grid system and cemeteries out-with the boundary. There are also differences : religious buildings within a possible defensive boundary at Castellazzo di Fontanellato; religious buildings out-with an undefended boundary at Marzabotto. Having already noted the Greek influence on Etruscan culture we must look to Greece and its mainland cities in approximately the same time span from the 7th to the 4th century B.C. on the location of religious buildings. What we find is that most acropoleis were situated within the city and usually formed the last line of defence. Athens is the most obvious example where we are

are aware of the history of the Acropolis. While the grid system would have permitted the establishment within the city boundary of areas designed to take such religious buildings then the exclusion of the religious area from the city is a direct contradiction of what seems to be Greek practice. On that basis Marzabotto is not a Greek city but an Etruscan city though one which does pose questions which so far are unanswered.

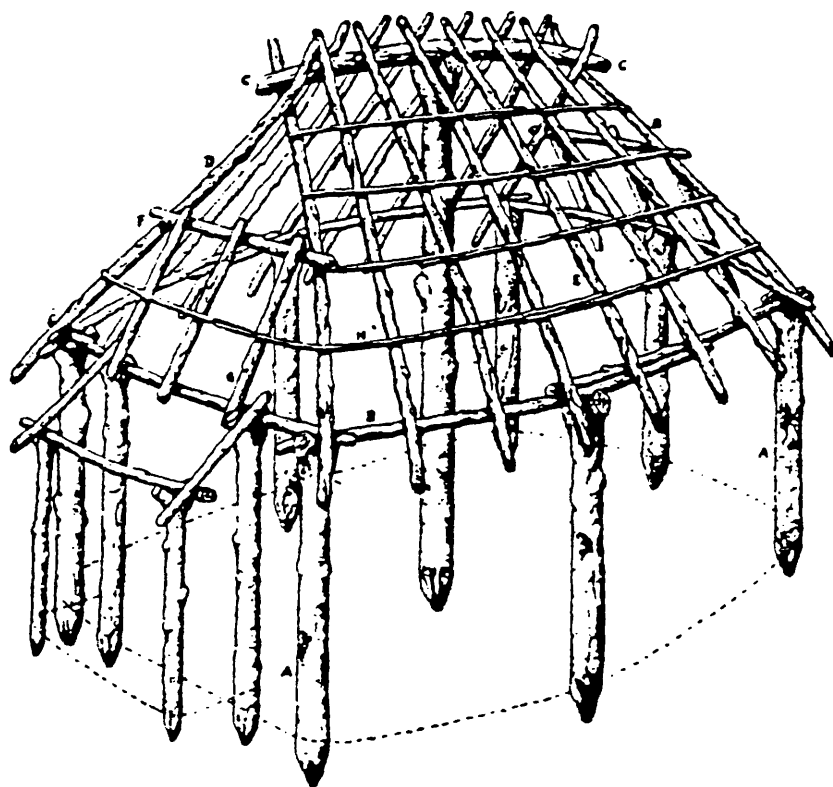
Chapter 6

Italy : The Republic to the Early Empire.

500 B.C. - A.D. 1.

If we accept the conventional dates then 510 B.C. is a unique date, a year which saw the end of the Peisistratids' tyranny in Athens with the subsequent attainment of greatness in the 5th. century B.C., albeit briefly, and in Rome the end of the monarchy and the birth of the Republic which led to the creation of the greatest Empire the world then had ever seen. It is a strange coincidence that 510 B.C. should be such a significant date for the Polis State of Athens and Attica and for the Roman Republic, two separate and distinct cultures and while there are early parallels each State pursues different objectives. The emphasis of my thesis is the house and planning as two of the basic building blocks in the evolution of humankind and their various forms of society; they are inextricably linked. As societies have evolved I have examined how the house and planning have developed in the societies they serve and while the link remains they are now being subsumed in the more complex societies which have developed. It is my view that in the period now under consideration there can be seen the most radical changes in both planning and the house which reflect the change in political, economic and social conditions which start taking place with the advent of 510 B.C. and the fundamental political change which takes place in each culture. I have already discussed Greece in the Classical Period and I will in the course of this chapter draw comparisons with the development of planning, the house and public buildings in Roman society with the Greek model where appropriate.

The expansion of Rome from a local power into one which eventually controlled the peninsula and with overseas acquisitions then developed into an Empire is well documented and is not relevant to this thesis other than where that expansion induces necessary change in planning and the house to meet the requirements of the Republic in new and changing circumstances. Rome in the 6th. century B.C. was already a beneficiary of Etruscan thinking and skills and like most Etruscan cities had no formal planning but simply grew in an informal and haphazard way. The expulsion of the Etruscan King Tarquinius Superbus in 510 B.C. saw the establishment of the Republic¹ and the elite or aristocrats assumed control with, initially, the approval and consent of the people. Rome had already benefited from Etruscan skills, they were responsible for draining the swampy valley which was subsequently developed as the Forum. Etruscan religious beliefs



*Figure 32: Rome. Hut on the Palatine
Reconstruction by A Davico. Rivista di antropologia, XXXVIII (1950-51)*

and customs were also in evidence, the earliest pomerium or sacred boundary was laid out in accordance with religious rites and seems only to have taken in the Palatine and the Capitoline ² but was later extended to include the Caelian, the Velia, the Oppian, the Viminal, the Quirinal and the Esquiline hills. All of these areas were surrounded by a large circuit of wall by Servius Tullius in the 6th century B.C. but perhaps the most significant development, started under Tarquinius Superbus, was the Temple of Jupiter on the Capitoline hill. This was an Etruscan temple constructed on a podium and with columns only at the front, unlike a Greek temple. All that has been found are the remains of a rectangular podium measuring 62 x 53 metres. ³ The evidence for domestic housing in the Early Republic is largely based on Etruscan tombs and funeral urns and relates mainly to large houses, the houses of the rich elite, but archaeology has confirmed that ordinary houses in the early days, the 7th century B.C., were simple huts of timber construction and the walls and roofs were of wattle daubed with clay. An extension over the only door was carried on timber supports, really like a porch, with an outlet over the door, sometimes on the other gable also, to let out smoke. ⁴ (See Figure 32)

We do not know what type of housing followed the huts, which were both round and rectangular, but it is a reasonable assumption that in Archaic Rome there already existed, by the end of the 6th century B.C., a regulated society and King Superbus probably had a team of advisers, most likely drawn from the rich members of that society and in the new Republic those advisers formed the Senate, the new repository of power in Republican Rome. The people, more usually described the plebeians, who under the monarchy already had the right of assembly under the Comitia Curiata, the people organised in kin groups and the Comitia Centuriata, the people organised in army units, ⁵ initially accepted the new system. The battle of the orders, between the patricians and the plebeians, was a recurring feature down the centuries of the Republic even though the plebeians gained equality in political and religious rights the organisation, named Comitia Tributa, simply became another assembly of the State. ⁶

Politics and religion were the two closely linked elements of control in the State sphere and which would oversee planning, among other aspects, and this can be seen in the construction of the Forum as the public and civic centre of Rome; it is where the Curia Hostilia, the council chambers of the Senate and the Comitium, the meeting place of the assemblies are established. Reflecting the close relationship between the State and religion was the fact that a man could hold a secular position and a priesthood and while the secular position was for a fixed period the

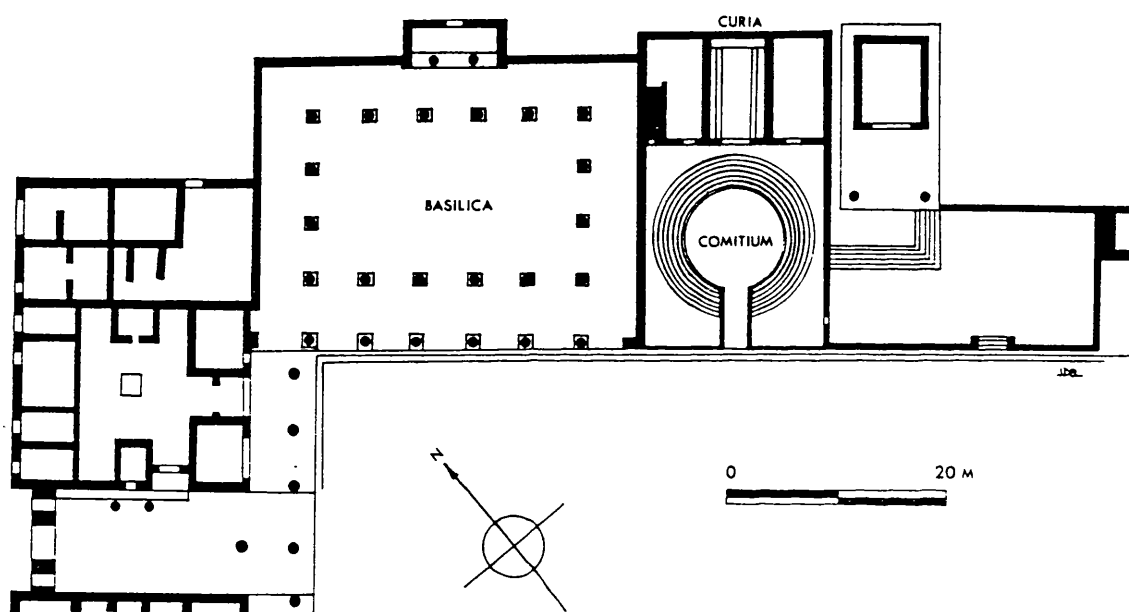
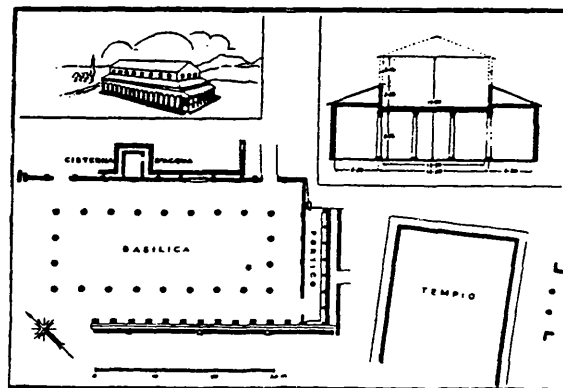


Figure 33: Cosa, buildings on the north side of the forum, showing the basilica and Comitium. Plan as it appeared in the late second century BC

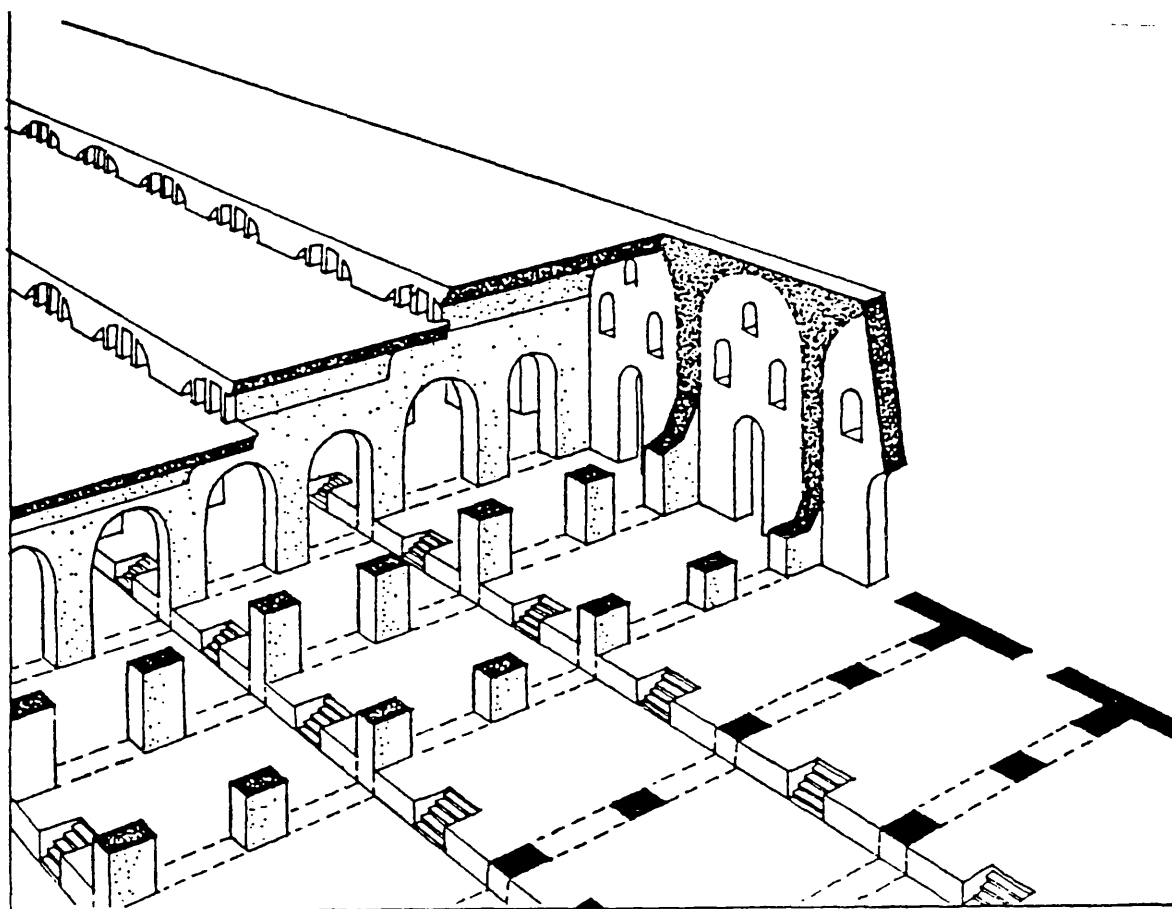
priesthood was for life. ⁷ Early Republican temples included the Temple of Saturn, dated 498 B.C. and the Temple of Concord, dated 366 B.C., which serve to illustrate the position of religion in the affairs of State. ⁸ If there was formal planning in the new Republic, and we have no evidence to prove there was, then it can be seen in the creation of the Forum as the focal point of the Roman citizens' public activities and where the public buildings were located which dealt with the affairs of State and the governance of the city.

The Forum became the focus of Roman public life and it maintained that position into the early days of the Empire if not later. Much has been written about the Roman penchant for axuality and symmetry and the Forum is the expression of that axuality and symmetry which emphasised that Rome is the centre of power. Axuality and symmetry were an essential part of that power and the removal of shops (*tabernae*) from the early Forum in Rome ⁹ would seem to indicate a determination by the Senate to assert the Forum as the centre of power not only for its citizens but also as an expression of Roman power to those States and external powers with whom she had to negotiate. I am not aware of any evidence of an Etruscan influence in the formation of the Forum though an Etruscan influence is apparent in the Temple of Jupiter on the Capitoline hill where the Etruscan sculptor Vulca from Veii was brought in to make terracotta sculptures to adorn the temple. ¹⁰ The Forum developed as the power of Rome expanded and this can be seen in the Middle Republic of the 4th and 3rd centuries B.C. as the conquests necessitated the establishment of colonies and fortresses to protect the ever extending interests of the Republic. An early example is Cosa, a Latin colonia, founded in 273 B.C., which was laid out in a grid system and the whole was enclosed by an irregular polygonal wall. ¹¹ The Gallic sack of Rome in 390 B.C. led to the building of the so-called Servian wall in 377 B.C. and it seems clear that a defensive wall must have been a requisite of any new colony especially one with a specific defensive function at the extremity of Roman territory, and Cosa conforms to type. The Forum at Cosa was a long rectangular area and the earliest buildings adjacent to the Forum appear to be the circular *comitium*, surrounded by steps and at its rear a rectangular building identified as the *Curia*, built in the period 275-250 B.C. on the north side. ¹² (See Figure 33)

Perhaps the most seminal moment in the Republic's early history was the defeat in 338 B.C. of the Latin communities around Rome when they attempted to assert their independence of Rome and the incorporation thereafter into the Roman political body with constitutions modelled on that of Rome; it was the start of the Romanization of Italy. ¹³ The Forum was part, and a very



*Figure 34: The basilica of Ardea. Early first century BC
Plan and reconstruction by E Wikén and J Lindros from the Italian-Swedish
excavations, 1929-35*



*Figure 35: Rome, Porticus Aemilia, 193 BC, restored in 174 BC: axonometric plan
(from A Boëthius and JB Ward Perkins, Etruscan and Roman Architecture,
Harmondsworth 1970)*

important part, of that process and the continuing development saw yet further additions which emphasised its importance both in the day to day running of the town or city and its allegiance to Rome. It is in the 2nd century B.C. that we first see the basilica as a component of the Forum and while it is argued by Axel Boëthius that 'the basilicas had undeniable predecessors in Greek peristyles and hypostyle constructions' ¹⁴ I believe this type of construction was a Roman innovation which made use of Hellenistic features such as columns as both a structural element and design feature. While the basilica takes several forms the usual form is rectangular and it is adaptable, that is, while the normal positioning is the long elevation fronting the Forum it can also be constructed with the short elevation to the Forum. The basilica at Cosa is almost square in shape and is located on the north-west side of the Comitium and the Curia. It has a temple extension situated centrally on the rear elevation and facing the Forum. The basilica of Ardea, built in the early 1st century B.C., shows the adaptability of the basic design where a clerestory is constructed over the central area with windows inserted in all four elevations thus providing light to the central area. At the north-east end of the basilica a portico was built. (See Figure 34)

Mention must be made of concrete as a building material which played an important role in the magnificent Roman architecture particularly of the 1st. century B.C. and subsequent centuries. It is thought that Campania was probably the area where the first mortared walls were built but certainly experimentation in concrete commenced in the 3rd century B.C. in Pompeii and later in Rome and continued into the 2nd century B.C. ¹⁵ With the advent of concrete a whole new dimension was created for architects and engineers of the Late Republic to apply in the construction of monumental public buildings. While the arch, the vault and the dome had been employed earlier in Egypt and Mesopotamia and clay domes were constructed from early times in the Near East, it was the Romans who fully appreciated both the strength of concrete and the aesthetic value of these three elements ¹⁶ in the design and construction of great public buildings which were such a notable feature of the Late Republic and the Empire. Concrete had the added attractions of being a quick method of construction and was also inexpensive when compared with more traditional materials while it released engineers from the requirements of a rectilinear support system and brought in the three dimensional curve as a dramatic and spatial possibility in architectural design. ¹⁷ One of the earliest examples of the large-scale use of concrete was the Porticus Aemilia built in Rome in 193 B.C. and restored in 174 B.C., a building which Frank Sears describes as 487 metres long and 60 metres wide with a series of rows of barrel-vaults with regular rows of arched openings on their long side providing open space within the

building. The fact that there is much dispute about its date and identification does not detract from appreciating how the Romans had created a virtual revolution in ancient architecture with the use of concrete as a prime material. ¹⁸ (See Figure 35)

Another example of the early use of concrete is the Stabian Baths at Pompeii which date from the 2nd century B.C. and while this may be considered a modest building when compared to later baths of monumental size in the early years of the Empire nevertheless it was a building which clearly illustrated the architectural revolution instigated by the use of concrete. The roofing is shown from the barrel-vault of the apodyterium (dressing room) which survived both the earthquake of A.D. 63 and the subsequent burial in the eruption of A.D. 79 The frigidarium (cold room) which was square externally but circular internally with a conical dome, (this is possibly the earliest Roman dome known) is yet another piece of evidence pointing to the new found freedom of expression. ¹⁹

I have concentrated, though briefly, on the Forum, the temple, the basilica and the thermae and this to the exclusion of aqueducts, drainage systems, triumphal arches, circuses, theatres, and other public buildings, yet they all represent the beneficence of the State or the rich and the famous and all are serving to show the power of the Roman State. That there is a form of planning can be seen in the colonia, but in the formal layout of the Forum there is planning, it has axiality, it has symmetry and it is a very visible expression of Roman power. Though not subject to formal planning as we understand it the provision of public buildings by either the State or rich benefactors while of practical use in the process of governance are propaganda exercises designed to highlight political and religious supremacy and the generosity of benefactors. In modern terms they may be described as physical expressions of 'spin' continually subscribing to the power of the Roman State.

We know little of pre-Imperial housing and we are dependent on Pompeii, where the oldest houses date from the 3rd century B.C. but these early houses were Oscan and not Roman and in the view of D.S.Robertson 'present a clearly defined Italian type which was probably the common property of the peoples of central Italy'. ²⁰ Other sources of information are Herculaneum and Ostia. The early evidence is provided by rock sepulchres discovered at Cerveteri and from cinerary urns found at Chiusi where the form of the house was shown to be rectangular with a double-sloped roof angled at a low pitch and consisting of a single room. It is

argued that this type of house forms the basis of the Mycenaean megaron and the Greek temple.

²¹ The tombs at Cerveteri dated to the 6th century B.C. show how this basic house developed with an un-roofed entrance hall, which equates to the corridor of the tomb, a small courtyard on to which open two lateral rooms with the main body of the house at the rear with one, two or three rooms. The courtyard could well be the fore-runner of the atrium and the point is made that the three-roomed type became the most usual and its resemblance to the Etruscan three-cell temple has already been noted. ²² However, the main body of archaeological evidence is from Pompeii, Herculaneum and Ostia together with farms and villas in the countryside but this is a very wide field and I will concentrate only on the urban evidence which can best demonstrate the fast changing social scene and where the house plays an increasingly diverse function in society. Housing, especially in the Late Republic and Early Empire, falls into two basic types, the domus and the insula, the earlier of the two being the domus.

Our three sources of evidence show the domus to be the houses of the rich and the wealthy bourgeoisie and Vitruvius' main recommendations are for houses with reception halls, called atria, and he gives a description of five different types which he calls, respectively, Tuscan, Corinthian, Tetrastyle, Displuviate and Vaulted. ²³ It is the Etruscans who are credited with inventing the atrium and the word atrium is said to be of Etruscan origin but we do not see any representation of the atrium house in the tombs belonging to the Archaic period; it is in the rock-cut tomb at Tarquinia, the Tomba della Mercareccia, dated 4th century B.C., where the first room has a ceiling shaped like the roof of an atrium. ²⁴

The atrium domus seems certainly an Italic house and there are features which should be noted especially in the earliest of the models of which we know. Privacy is an apparent necessity with the house looking inward and presenting externally a virtually featureless elevation to the world with any window apertures being placed high on the elevation thus eliminating any internal view of the house from passers-by and possibly also to minimise, if not eliminate, the possibility of burglary. Given that populations in the 3rd century B.C. were still relatively small the demands on space could be accommodated as might be seen in the original old town of Pompeii where there seem to be signs of a form of grid planning though this may be as a consequence of topography rather than an attempt at formal planning. The House of the Faun in Region VI, just to the north-west of the original town, is an example of the availability of space, it occupies a whole insula or block and was built in two phases, the first in the early 2nd century B.C.

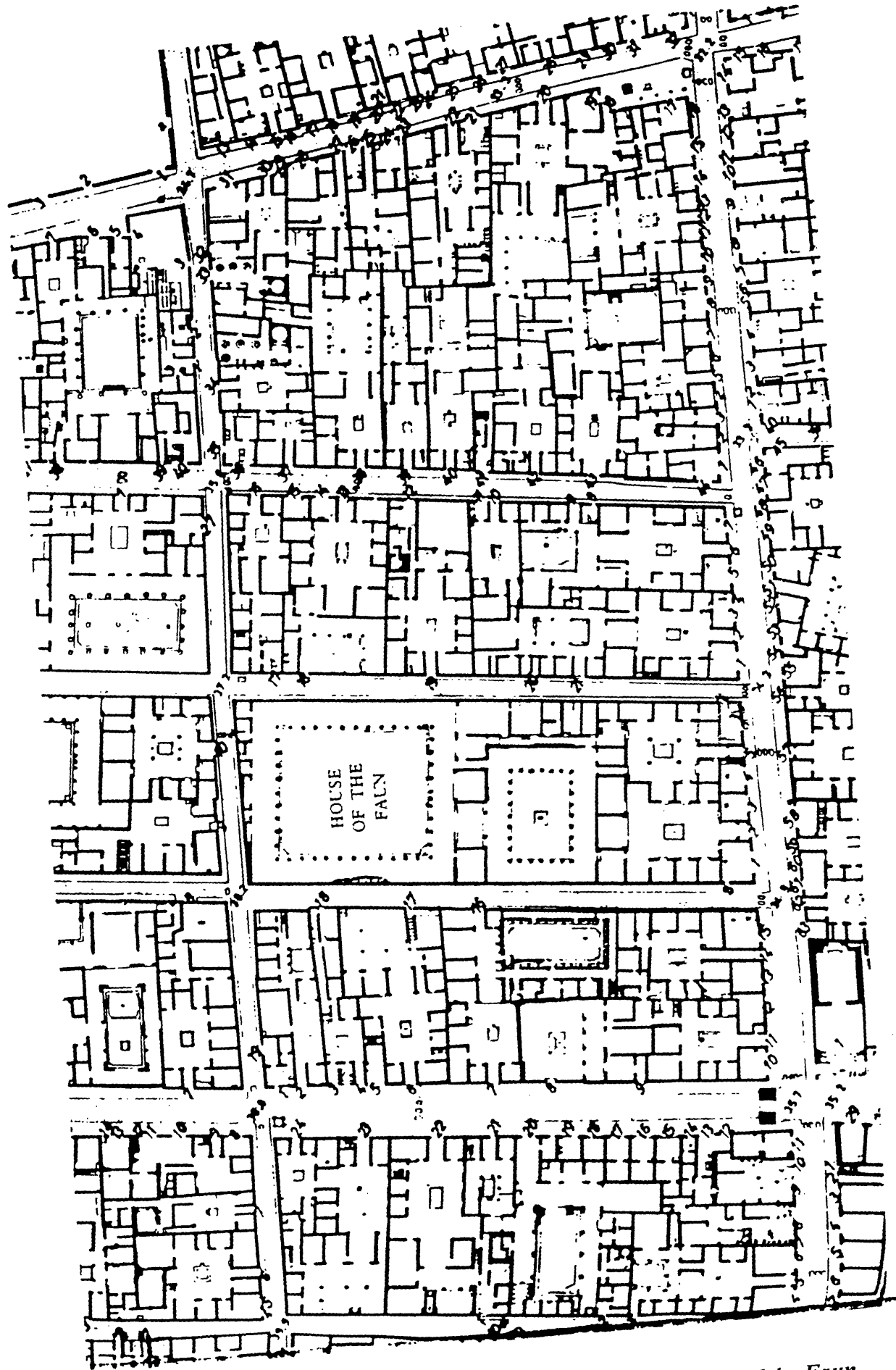


Figure 37: Plan of Region VI of Pompeii, including the House of the Faun

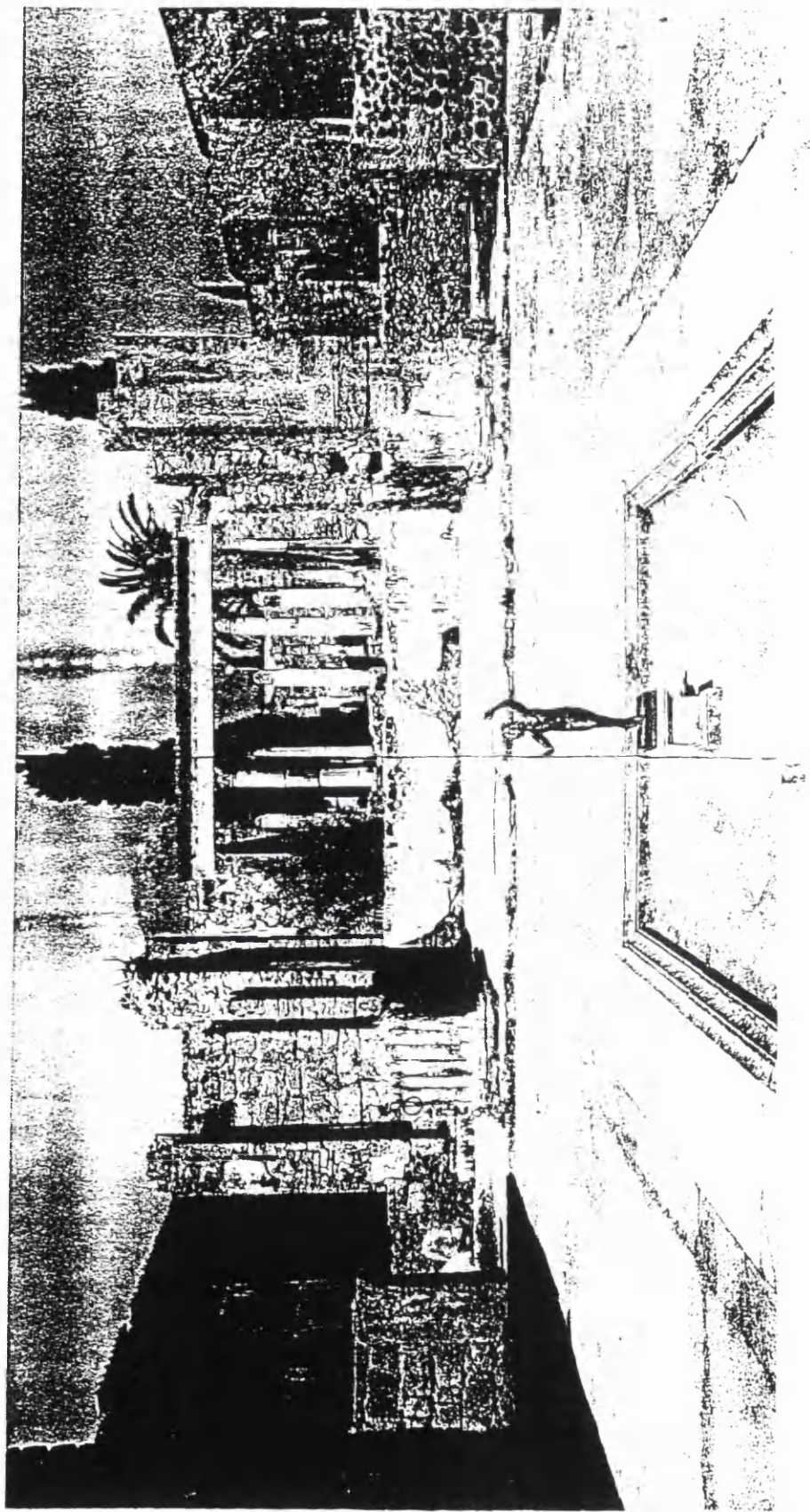
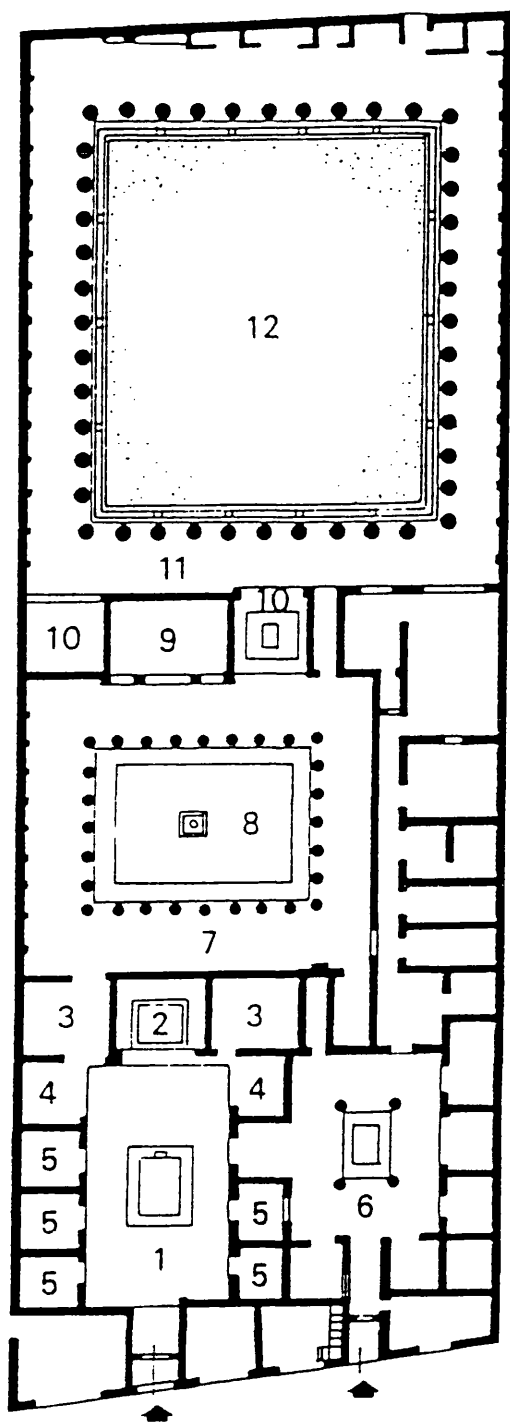


Figure 36b: The principal atrium of the House of the Faun with, at the centre, the bronze figure after whom the house was named



- 1 Atrium Tuscanicum
- 2 Tablinum
- 3 Triclinia
- 4 Alae
- 5 Cubicula
- 6 Atrium Tetrastilum
- 7 Peristilium
- 8 Viridarium
- 9 Exedra
- 10 Triclinia
- 11 Peristilium
- 12 Viridarium

Figure 36a: House of the Faun, Pompeii

superimposed on an earlier 3rd century B.C. house which with its hortus was on the site of the first peristyle and the second phase in the late 2nd century B.C. when the second peristyle was added and its final size established. It consists of two quarters, with the main quarter located to the west, and both quarters not only interconnect but also have separate entrances on the front elevation located on a row of four tabernae or shops. Interestingly, the western quarter has a Tuscan atrium (compluvium) with an impluvium which is paved in a pattern of polychrome rhombs while the eastern quarter has a tetrastyle atrium and impluvium. It appears the eastern quarter consisted of various service rooms and a corridor on the east side of the first peristyle gave access to a stable, a latrine, a kitchen, a bath with tepidarium and calidarium and a triclinium. The sheer size of this house is an indication of the wealth acquired by the Roman-Italic upper classes with the expansion to the east of the Empire. ²⁵ (See Figures 36a and 36b)

The final feature is one which I have already commented upon in discussing planning in State and administrative functions and that is axuality and symmetry. It is difficult to achieve both axuality and symmetry where the site is irregular in shape or angled, as in the House of the Faun which was angled to the north-west, but the attempt was always made to acquire this position. In the House of the Faun it can be clearly seen that a degree of both axuality and symmetry was achieved in the western quarter. Viewed from the fauces (entrance corridor) can be seen the atrium, at its rear the tablinum and beyond it the first peristyle through which could be seen the larger and second peristyle. (See Figure 37)

There is little evidence to suggest that the area beyond the tablinum was just a garden but as wealth grew and ideas were being brought back from the east so there is introduced the Greek peristyle which formalises the garden and we have an elegant fusion of Italic and Hellenistic styles which must have provided a very gracious and private mode of life. It was not the only type of dwelling and Pompeii shows that there were many more modest houses for the lower classes which could consist of only a couple of rooms or a single room having a mezzanine floor or even a taberna, the occupier's place of work, with a mezzanine floor providing the living quarters. ²⁶

The symmetry to which I have referred may be best shown in a consideration of the House of the Surgeon at Pompeii where, before the extension on the right side of the building, the original

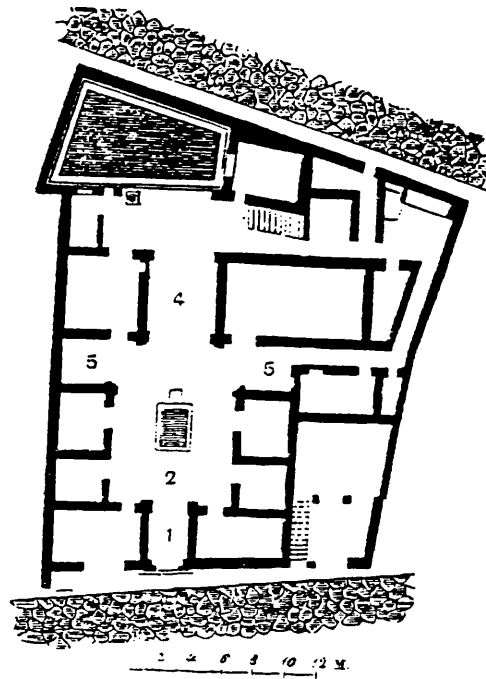


Figure 38: 'House of the Surgeon', Pompeii

grouping of the rooms round the atrium was effectively a mirror image with the left side identical to the right side. On entering the fauces you are led directly to the atrium and opening onto the atrium is a room on either side of the fauces and running along the atrium on either side are two rooms beyond which are two alae. Beyond the atrium in a central position facing the fauces is the tablinum, the principal room of the house and again on either side two rooms entered from the atrium. At the rear of the tablinum was a small garden which would have been visible from the fauces at the front. There is evidence that the tablinum could be closed off to the rest of the house either by curtains or doors. It appears that there were rooms on an upper floor, though not over the tablinum, which was lit by windows on the external walls ²⁷ but as glass was not yet available this would have presented problems in heating during the cold season of the year.(See Figure 38)

The pressure of a growing population sees not only the expansion of Pompeii but a proliferation of tabernae to meet its needs and that is reflected in the conversion of the most suitable elevations, usually the front elevation, of the ground floor of atria to provide the required tabernae which may indicate not only a commercial awareness but possibly changing family requirements.

That there were atrium houses in Rome is certain but there does not seem to have been as many, on a pro rata basis, as in Pompeii, Herculaneum or even Ostia in its early days. This serves only to confirm the growing population of Rome in the Mid Republic now exerting pressure on the available housing stock. As early as the late 3rd century B.C., in 218 B.C. to be precise, there is a report of an ox which climbed to the third storey of a house near the Roman cattle market and in 191 B.C. two oxen made it to the roof but were immolated for their efforts. ²⁸ The reaction to the growing demand is upwards and so we have the second house type appearing, the insula or high-rise apartment blocks. We do not know a great deal about the insula in Rome though it is apparent that the early blocks constituted a dangerous fire hazard; there were no toilets or running water and cooking was done on an open brazier. The best apartments were at first floor and the same accommodation provided on the floors above but considered poorer because of height with the top or attic floor offering the worst accommodation though this would probably be compensated by a lower level of rent. It seems the economics of property were no different in those days compared with our modern practice. Russell Meiggs provides examples of renting activities such as one person leasing to you an insula belonging to a third person for 50000

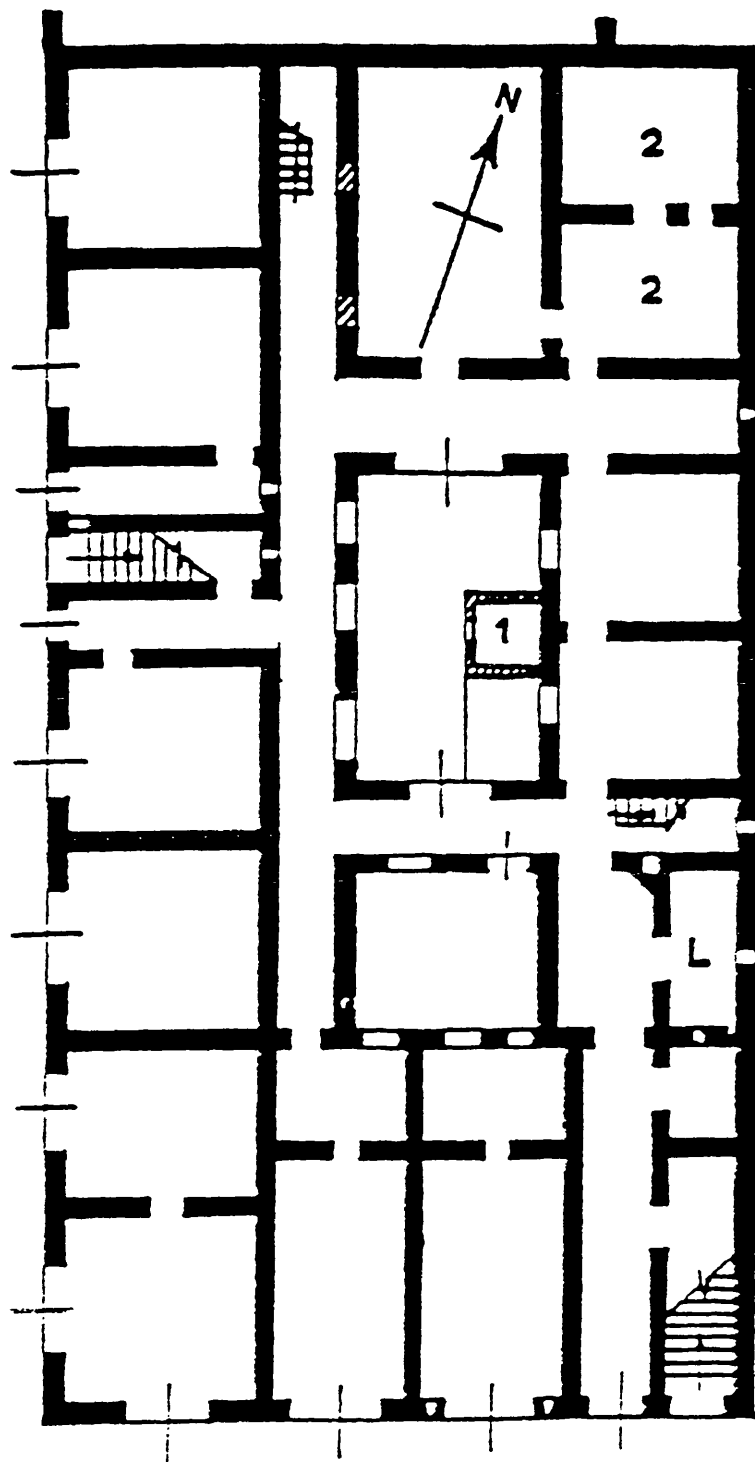


Figure 39: Ostia. House of Diana
1 – Cistern added in open court
2 – Rooms later converted to a Mithraeum

sesterces, and you then lease to yet another person for 60000 sesterces or one man rents an insula for 30000 sesterces and then rents the individual rooms for a total of 40000 sesterces. It would be logical to rent the poorest apartment, that is, the top floor, at a lower rent than the rest of the insula than having it lie empty.²⁹ Russell Meiggs argues that the insula came late to Ostia and that those eventually constructed reflect the Roman models citing as evidence two facades in Rome, one incorporated in the Aurelian wall near the Porta Tiburtina and the other in the church of St. John and St. Paul on the Caelian hill; both show the same principles of construction as the insulae of Ostia.³⁰

There is some debate as to the height of Ostian insulae but the question of the height of these apartment blocks must have been giving cause for great concern with Augustus in the early days of the Empire putting through legislation to limit the building height of apartment blocks to 70 feet.³¹ There was a considerable degree of flexibility in designing an apartment block but certain general principles are evident with lighting of the various apartments a major concern, an economical use of space, more than two stories in height and with each floor being equally attractive as possible though the higher up you went the less attractive the apartments became for very obvious reasons. A good example of flexibility is the House of Diana where the north and east elevations were blocked by existing buildings so the developer introduced an inner court in the centre of the building which gave light to the rooms around it. The developer also introduced a cistern in this courtyard for the supply of water to the occupants. (See Figure 39)

While the insulae may have been designed to provide housing for the poorer members of society there is evidence to show that the wealthier members of society, who in earlier times would have been living in the atria domus, lived in Ostia in the insulae. Such high-rise apartment blocks were of much better design, offered better amenities and the apartments would have been larger and the public rooms of grander proportions. An interesting example which would have appealed to the upper middle class was the Garden Houses, so called because the blocks were constructed in a large garden. The development comprised two identical apartment blocks with each block being divided into two halves and in each half are two entirely self-contained apartments back to back.³² As will be seen from the plan there were six outside staircases giving access to the apartments on the upper floors. The apartments were commodious with the two principal rooms located one at either end of a large corridor or hall off which were three smaller rooms, probably bedrooms, with indirect light from the windows in the hall. The principal room in each apartment

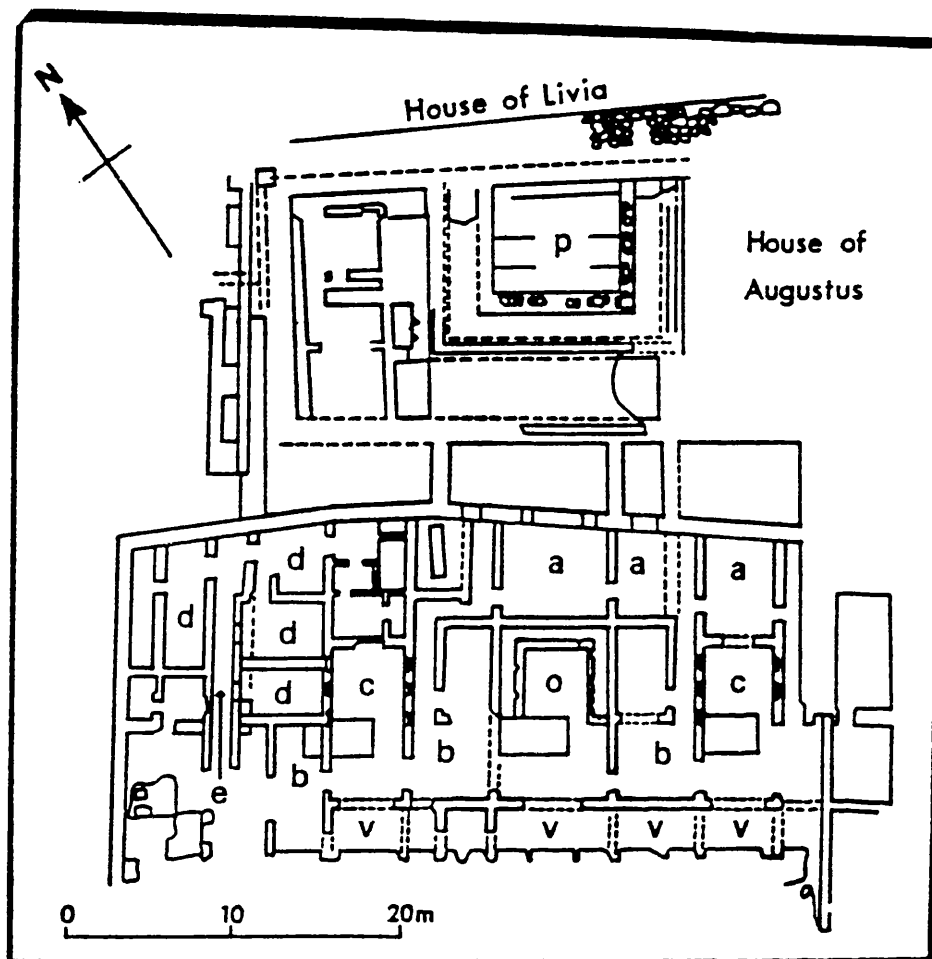


Figure 41: Rome. House of Livia and House of Augustus

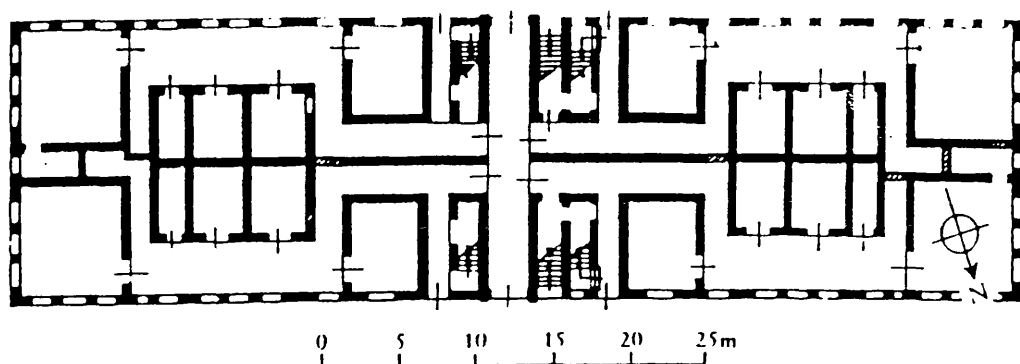


Figure 40: Garden Houses at Ostia (AD 117-38)
One of a pair of identical blocks at least three, and probably four, storeys high. These symmetrically planned groups of maisonettes surrounded by open space must have presented a remarkably modern appearance.

is located on the gable walls with windows on both the gable and long elevation walls. I have only considered two examples of insulae though it will be appreciated that the design of insulae had many variations which would have reflected the best use of the site and that sector of the market which the developer wanted to attract. (See Figure 40)

While it is clear that insulae eventually dominate the domestic market in Rome and also later in Ostia during its prosperous period the atrium domus was not altogether abandoned. In spite of his supremacy as the First Citizen among equals and his later status as Emperor then Augustus living on the Palatine hill did so in a very unpretentious manner and it may be argued in too modest a fashion for a man of his stature and power. It is Suetonius, as Axel Boëthius points out, who implies that people were amazed that Augustus should live in such a modest house which had only small peristyles, that the columns were of stuccoed Alban stone and that the rooms were without any marble decoration or handsome pavements.³³ But we now know a little more of the Augustan mansion which was constructed on two levels with the top storey lying across a narrow street from the House of Livia with the main residence being at the lower level alongside the monumental staircase leading to the Temple of Apollo Palatinus. It is at the lower level where the space has been deliberately designed as a private sector within the larger mansion.³⁴ If one compares Augustus' domus with the villas and palaces of his successors then Augustus did live modestly and in the old tradition of not flaunting his wealth. (See Figure 41)

While the atrium domus was in retreat in the cities the principle of gracious even luxurious living was spreading to the villas in the countryside which were really small farms, agricultural as the word villa implies, but this seems to have been a slower process. While many no doubt remained farms others were adapted to the new style of living and Cicero best describes the difference when providing information on his family home. While his grandfather lived the farm or villa was as small as the villas of more ancient and simpler times and it was Cicero's father who both rebuilt and enlarged it in the then modern idiom to accord with the father's tastes and lifestyle.³⁵ The villa could, and did, take many forms incorporating peristyles, terraces, porticoes, podias and cryptoporticoes; they were constructed over one, two or even three floors, they maximised the best of the elements, for many patricians they provided the perfect weekend retreat after a hard week in the city. There were small villages and farms with small and simple buildings in addition to the larger and more luxurious villas but the concept of the atrium domus with its better quality of living had reached the countryside.

I have already referred to State planning in its political and religious concept with the provision of public buildings such as the Forum, the Curia and the temple but these were the public expressions of power and no doubt considered essential. However, there were other planning considerations of a more practical and no less essential nature such as defences and the supply of water, indeed, if there was no supply of water then there would be no town or city. While the provision of such services would have been a major undertaking there then arose the important question of maintenance and with the introduction of water you then required drainage systems to remove the used element and this produced the need for paved streets to provide and regulate suitable courses or channels for the drainage. Rome excelled in the provision of water where her engineers overcame every hurdle to bring water to the city and increasing the supply when population growth increased the demand for water. Perhaps the same claim cannot be made for the early defences as the Gallic invasion in 390 B.C. indicated but the defences were improved thereafter.³⁶

This might be called secondary or subsidiary planning necessitated by the original formation of Rome and its subsequent growth to control, at least to some extent, those matters which were seen to be essential for the well-being of both the general public and the public interest. As early as 451-450 B. C. at the time of the Twelve Tables there were laws concerning the space to be left between properties and with the demolition of buildings even though Rome in this period was certainly not a metropolis.³⁷ What we are seeing are the very early stages of the municipalization of Rome, a municipalization not dissimilar to the modern City Council of today but one which devolved from the Senate through the Consuls, the praetors and then the Urban Prefect and so the bureaucratic machine developed. It does not appear to have been a smooth process;³⁸ it was a mixture of civic law and private law, there were periods of confusion as to who was responsible for what but, in general terms, it worked to meet the requirements of the time. It is interesting that building regulations appear so early in the mid-fifth century B.C., it was not to control the insula as this form of building did not exist then, but it may postulate that even then there was increasing demand for land within the pomerium or sacred boundary; whatever the reason building regulations existed and continued down the centuries. After the Pyrrhic war, 280-275 B.C., roofs in Rome were no longer clad with wooden shingles but with tiles and while we know of no law or any reason for the change it is reasonable to assume this was a fire prevention measure and probably consequent upon a law.³⁸ Fire was a problem of

growing concern and with the appearance of multi-storey building this problem coupled with shoddy building practices, especially in the cheaper housing, became a major problem as did collapsing buildings. As I have already mentioned Augustus recognised the problem and imposed a height restriction of 70 feet on new buildings erected on public streets but almost a hundred years later Trajan considers it necessary to reduce this to 60 feet, it is assumed again relating to new buildings on public streets.⁴⁰

While it may be true to say that Rome was a planner's nightmare it would be entirely wrong to assert that the Romans had no planning ambitions and I have argued that in the Forum and public building programme there was planning. Expansion and acquisition brought not only its rewards but also its problems and one of the problems was defending its gains. This required planning on a national or territorial basis. The concept of colonisation was not new, it was one that the Greeks knew well, but the Romans brought a practicality to the concept which served them well. The early *colonia* can be described as defensive: location was the first priority; it had to be in a position which could best defend Rome's interests; it had a nucleus of Roman citizens and it was designed to a more or less set pattern which we have called the Roman *Castrum*. It was rectangular in shape and had two main streets, one running from north to south, the *cardo*, and one running from east to west, the *decumanus*, and crossing each other at right angles in the centre of the town, the *mundus*. There is yet another type of Roman *Castrum* which Axel Boëthius calls a 'Hippodamian' *Castrum*, his view being that it reflects the Greek form of town planning in the 5th century B.C. on to which the Romans have grafted their own ideas. The basic difference in style between the two types is the Roman *Castrum* has the two main streets meeting and crossing at right angles in the centre whereas in the so-called Hippodamian *Castrum* there are parallel *decumani* and, if size or topography merit it, parallel *cardines* with narrower and intervening streets.⁴¹ What I find somewhat perplexing is that Axel Boëthius, in comparing Olynthus with Pompeii, reverses the Italic order, that is, the *decumani* (running north-south) are intersected by *cardines* (running east-west) but this may arise in his explanation of how it is the short sides of the blocks (roughly the same size as in Pompeii) face the *decumani*.⁴² What I do find unacceptable is his conviction that it is the Hippodamian concept which inspires the Romans who then adapt it to meet their own requirements.

In examining Pompeii we find a pre-Roman foundation, either in the late 8th century or early 7th century B.C., with the original town constructed around the area of the Forum. It was primarily

a trading post for important trade routes supplying goods to the hinterland. We know it was under Etruscan political domination until about the middle of the 5th century B.C. when, following the defeat of the Etruscans by the Greeks of Cumae and Syracuse at the battle of Cumae in 474 B.C., the Samnites expanded from their mountain fastness into the plain and Pompeii.⁴² It is acknowledged by some that the oldest part of Pompeii around the Forum indicates the tentative beginnings of an orthogonal plan where the two main streets cross each other, though not at right angles, and where in the four quarters there is a pretty basic attempt to impose a form of grid plan especially to the east of the Forum.⁴⁴ What might be said is it is the forerunner of the classical Roman Castrum but even if this were true it does lack the strict axiality and symmetry of the later model. While there is a degree of veracity in these assumptions the evidence is not strong. East of the Via Stabiana there are much clearer signs that a grid plan was imposed to regulate the development of residential blocks to accommodate the expansion arising from the Samnite takeover. It is reasonable to assume that what we see today of the blocks in the original part of the city would not have been the scene in the 7th or 6th centuries B.C., there would have been the normal activities such as rebuilding original structures, implementing new ideas, expanding structures, accommodating new uses but there is no archaeological evidence that the whole area was in any way renewed with new street lines, drainage channels or other major changes. This introduces the question of dating this area and while we have no specific dating of the Forum and its immediate area it is a reasonable assumption that it would have been established certainly by the 6th century B.C. or possibly earlier and would have taken the form of a market.

It is claimed that the grid plan is based on a pattern of alternating wider and narrower divisions, not on the axial crossing of the decumanus and the cardo, and that this can be seen in some Greek colonies such as Paestum, Naples, Locri, Metapontum and Selinunte where present evidence puts it as early as the 5th century B.C.⁴⁵ This grid plan does not obtain in the original Pompeii; the evidence, such as it is, points to the classical Roman Castrum. Based on the current evidence provided by Selinunte then it is clear that Hippodamus of Miletus was not the architect responsible for the conception of the grid plan.

A possible explanation is to look at the second half of the millennium which is one of constant change, of innovation and expanding populations and a reasonable assumption is that the two cultures were moving along the same road, if our dating is right, virtually in tandem though

arriving at different conclusions but conclusions which met the requirements of each culture. While there is no positive proof the little evidence we have of the Terramare and Marzabotto does suggest a possible Italic origin for what we call the Roman Castrum and likewise the possibility of a planned layout in Old Smyrna and Zagora suggests a possible origin for the Hippodamian system. Without further evidence these assumptions can only remain speculative though not totally without some substantive fact.

Who were the planners and architects ? Were they advisers to the ruling elite, did they impose their ideas because of their knowledge and skill or did they create in stone and mortar the ideas of the elite ? Whatever role they played is unknown to us until the historical period begins and even then our knowledge of the early days of both Athenian practice and the Early Republic is scanty. It is Vitruvius who provides some of the missing information and I will consider his treatise *De Architectura* in the following chapter seven.

Chapter 7

Vitruvius : *De Architectura* and other Architects.

No examination of past cultures and the links which may exist between them, especially of the house and planning, can ignore both the architecture of specific cultures and the planning associated with such architecture, they are the physical expressions of those cultures. It is archaeology which has revealed those ancient cultures of prehistoric times where the remains have been uncovered and where the artefacts found have extended our understanding of those cultures even if only in a very limited way. What we do not know is who were the architects of those so-called primitive societies or how they acquired their skills though it is a reasonable assumption that the skills learned by one generation would be passed on to the next generation. New skills would have been acquired to meet changing circumstances occasioned by expanding populations, greater productivity, new trading opportunities and perhaps even more leisure time. Regrettably we will never know who these architects were though no doubt archaeology will continue to unearth yet more information on these cultures.

While the foregoing also applies to the Archaic Period, to some extent, our sources of knowledge are now expanding as we enter the Classical Period and subsequent periods and we begin to identify not only architects but sculptors and potters from inscriptions, paintings and the written word. While there is no doubt that many conceptions were committed to paper very few have survived and we are fortunate to have Vitruvius' *De Architectura* which provides a valuable insight into the world of the architect at the close of the Republic and the beginning of Empire. It must be borne in mind that this is one man's view of what constitutes an architect, the knowledge and skills he must acquire, but Vitruvius goes further and in his own words his treatise was to be ' a complete system of architecture'. ¹

Before looking at his manual in more detail what do we know about Vitruvius ? In short we know very little about Vitruvius, we do not know where or when he was born nor do we know when he died, in most respects he was as unknown as Hippodamus of Miletus and what we do know of him is from his own writing. He tells us he was known to Caesar and it is likely that he was employed in the army as a military engineer or architect concerned with the engines of war and it appears that he served under Caesar in the African war in 46 B.C. ² This role was

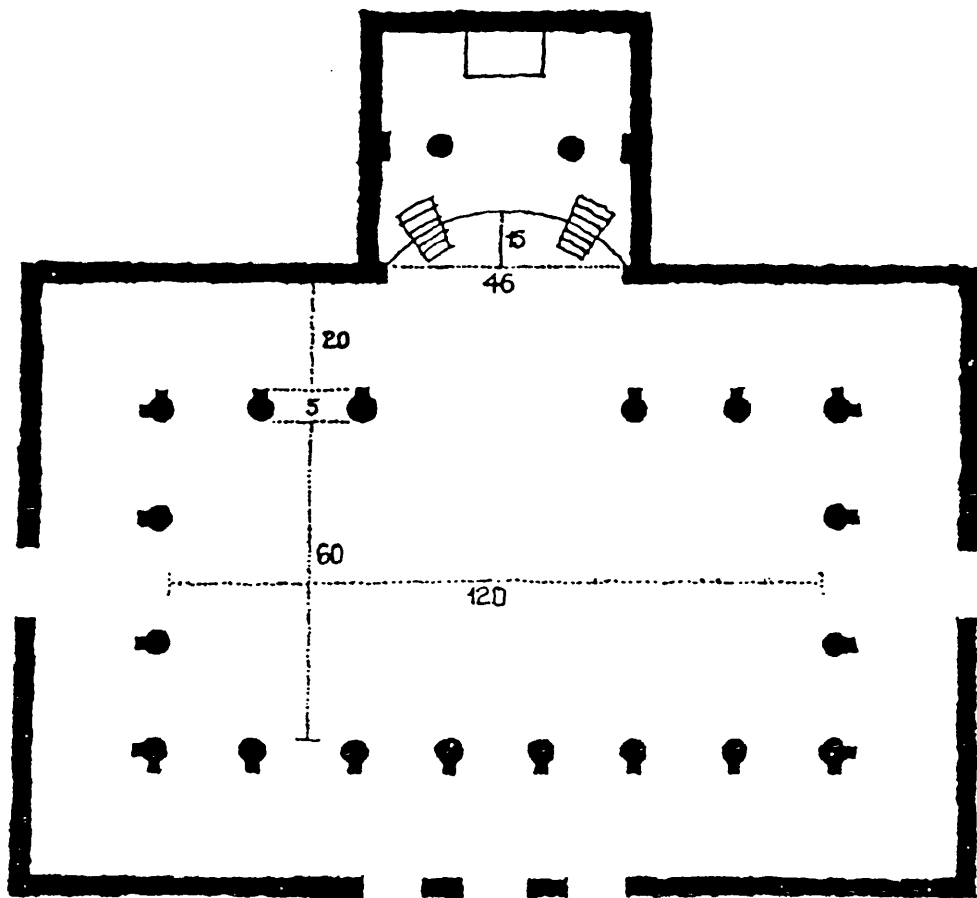


Figure 42: The plan of Vitruvius' basilica in Fanum (Fano)

continued under Augustus and he 'received advancement' which may have related to management of the city's water supply as Frontinus says the Roman plumbers acted on Vitruvius' instructions in determining the size of their lead pipes.³ The only building which is ascribed to Vitruvius, and Vitruvius is our source of this information, is the basilica at the Julian colony of Fano (Fanum) which he describes in considerable detail in his manual and claims he let out for contract and superintended the building.⁴ (See Figure 42) This plan is taken from Axel Boëthius' *'The Golden House of Nero'* and while he does not say so it is probably a reconstruction based on the writings of Vitruvius. It is reasonable to assume, knowing the various claims he makes throughout the manual, that if he had been responsible for any other public buildings or notable houses then he would certainly have mentioned them. One other snippet of information he gives us is that he was in his advanced years when writing his manual and he has no stature, his countenance is uncomely with age and ill-health has taken away his strength. His comments are a somewhat pitiful assessment of his position.⁵ While we know so little about him, he was an able exponent of the principles of architecture and he was clearly an engineer of ability. In many senses he was an environmentalist and he was a strong supporter of the contribution of science to the profession of architecture. Above all he was a traditionalist as we will see from the following.

I do not propose a detailed examination of the ten books of his treatise but where I do make reference I have used the translation by Frank Granger. In the first seven books Vitruvius provides us with his views on what he considers are the knowledge and skills which the future architect must acquire, what he understands to be the principles of architecture and what he believes must be the guiding principles of planning. He considers at some length the various materials used in the building process, their sources and the costs involved. In two books (Books 111 and 1V) he goes into considerable detail on the construction of temples of the three orders, the Ionic order in Book 111 and the Doric and Corinthian orders in Book 1V. He discusses the six types of temple in some detail and it is clear that of all public buildings he is of the opinion that the temple is the most important public building; this is further attested in covering all the other types of public buildings in Book V and of some types of public buildings with fairly scanty information. He turns his attention to housing in Book VI but, regrettably, it is the housing of the rich which is the subject of his deliberations. Again, he gives very precise detail on height, length and width of various components of five different styles, based on their courtyards, of the Roman atrium domus. He then goes on to consider the Greek mansion house though he omits

measurements of the various apartments. In his description he mentions a Great hall lying beyond the peristyle in which the ladies sit and its title suggests a possible connection with the earlier megaron but the lack of information precludes following this line of enquiry. He then gives some general comment on the stability of both Roman and Greek houses with particular emphasis on the preparation and nature of foundations, an essential feature, which he rightly considers important. It is interesting that he attempts to lay down ground rules for the type of house which he considers compatible with different ranks of society and it could be argued that Augustus who, as we have seen, lived very modestly, may not have been best pleased by these comments. A closer examination of his words shows he makes the distinction between rooms belonging to the family and those which are shared with visitors but on his undertaking to consider how the house should be planned to reflect the distinction he makes no further comment. He does say that if the buildings are planned with a view to the status of the client as described in Book 1. 11. 5 then you will escape censure but this takes us no further forward. What can be recognised are the public apartments but he gives no detail on how the floor should be laid out to make the distinction between public and private other than the composition and appropriate measurements of the atrium, the alae or wings, the tablinum, the peristyle and the triclinia or dining rooms. I make a later reference to his comments on wall painting but I think it relevant to refer at this point to one or two of the hypotheses advanced to determine what the social standing of the occupants was and how rank is conveyed to the visitor, either when the house was occupied or, centuries later, to the excavators exhuming the extant remains. Part of the argument advanced is that Vitruvius when referring to public and private areas is describing the Roman understanding of these areas, that is, the patrician welcomes his clientela into the recognisably public areas such as the atrium and the tablinum but his intimate friends and close business acquaintances into his cubiculum (bedroom); thus private, as we perceive it in our modern society, is not private and a truer description may be semiprivate. ⁶ I do not accept this argument as I see no difference implied in the words used; what is different is that the place of work for the patrician is his house and contained in what is known as the public area in the house but he both conducts business with close business associates and entertains intimate friends in his cubiculum and probably in other apartments in the family area and that area is correctly described as private. The argument is extended in claiming it was difficult if not impossible for the upper-class Roman to achieve real privacy citing the presence of slaves and pedagogues living and working in the private area but technically these people were all under the control of the master (paterfamilias), they were a part of the family. Of greater interest, and part of the argument, is the combination of architecture

and decoration as a guide to social ranking. I do not propose considering this in any depth, it is a complex matter, but I do think the conception, while of some merit, can only be used with great caution. With the increasing wealth of the upper-class in Roman society there came the material acquisitions which appeared necessary to maintain and advance the status of the individual, certainly to his clientela, and the physical expression of his wealth was his place of business, his house. Size was certainly important and the architecture had to be imposing but the internal finishes were equally important, they were the necessary complement to the architecture, and the whole combined to impress the visitor of the wealth and influence of his patron. Internal decoration is a natural complement to architecture and the general view, based on the findings at Pompeii and Herculaneum, is that there were four styles or phases in the use of mural decoration over the period of the Late Republic and early Empire.⁷ I accept that mural decorations and the subject matter of such decorations would emphasise the taste and wealth of the patron, the cost of pigments and the artists would have been expensive, a factor which would have been understood by the visitor and no doubt the subject matter would have been in accordance with the style of the day. Attention is drawn to one particular example of the use of mural decoration which is believed to emphasise the architectural differentiation between public and private and that is the Casa del Principe di Napoli at Pompeii. This is considered to be valuable evidence because its decoration is of one style and period. The contrast is neatly shown in the division of the house between the rooms opening onto the atrium and the rooms opening onto the porticoed garden. The decoration of the service quarters off the atrium is severe but of the public rooms is described as elegant but simple architectural articulation. The portico leads to a lavishly decorated triclinium with mythological paintings and a cubiculum decorated with figures of deities. The contrasts between public and private are assumed to be deliberate.⁸ While this may be the case it is also acknowledged that surviving Roman houses, mainly at Pompeii and Herculaneum, exhibit mural decoration which is a hotchpotch of different periods and styles.⁹ It is an innovative approach in an attempt to understand the social patterns which prescribe the architecture and decoration of the atrium domus in the Late Republic and early Empire but as I have said great caution must be exercised in this approach which can and does involve so many different factors.

One opposing view is that the households of Pompeii provide the most detailed archaeological source of information we have on the Roman household; this statement ignores Herculaneum on the basis that the same study of contents, so far as I know, has not yet been carried out. The

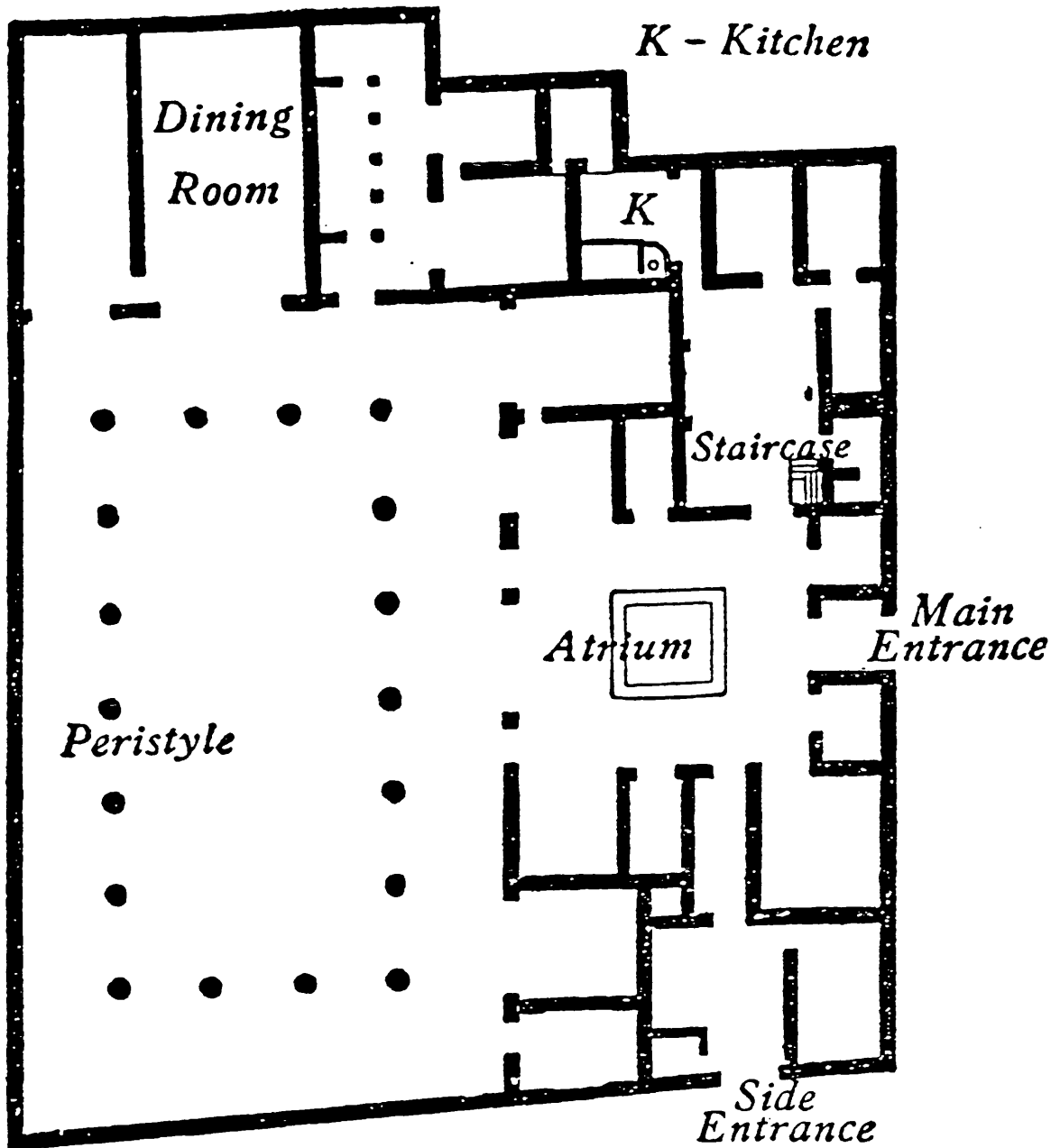


Figure 43: Plan of House
Domus Vettiorum, Pompeii, Book VI.iii.3

study is based on the artefacts found, where they were found, the distribution pattern , the assemblage of artefacts and so on but without comparable research of other Roman towns this approach must be considered to be limited. ¹⁰ I do consider this method has some merit but again caution must be exercised in interpreting this non-verbal communication approach based on Pompeii. It is essentially a consideration of a moment in time, that the population was still in some disarray following the earthquake of A.D. 62 testified by houses vacated at that time and never reoccupied and some were still in the process of repair and presumably were not being used in the normal manner. One other factor which is acknowledged is that it would be wrong to make the assumption that Pompeian houses are the model for Roman houses and households, ¹¹ a caveat which, to some extent, substantiates my view.(See Figure 43)

Vitruvius makes very sensible comments when describing the home of a farmer; he is concerned that a proper balance should exist between the land and its produce and the requirements of the farmer and his family. The farmhouse and its associated buildings are laid out to maximise the produce of the farm be it pastoral or agricultural and it is in this Book where we see the environmental concerns of Vitruvius. He then goes on to set out the manner and methods to be employed in the internal finishes of the house providing very explicit instructions on how to lay pavements and the steps necessary to cope with rising damp. I have said that I consider he is a traditionalist, a conservative with a small 'c', and this is shown most emphatically in his views on the then current manner of internal decoration or wall painting as he describes it. He presents a rather jaundiced view of what he calls improper taste in painting monsters which neither are, nor can be, nor have been. ¹² It is a stinging rebuke of the modern fashion of wall painting which he does not consider either to be related to reality or to the elegance he seeks to achieve in the finishing touches to the interior of the house.

In reviewing the first seven Books there are some opinions expressed by Vitruvius which require closer examination. I have already stated my view that in earlier societies and civilizations the architect was possibly also the planner and to some extent Vitruvius supports my argument. On planning, more correctly, on town planning he strongly advocates three basic rules which comprise the environment, defensive walls and the layout of the town or city, and in that order. No objection can be made to his environmental requirements which generally are extremely sensible. The prime requirement is a healthy site with a suitable supply of water and ground in the immediate area for the production of crops to sustain life. The defensive wall follows when

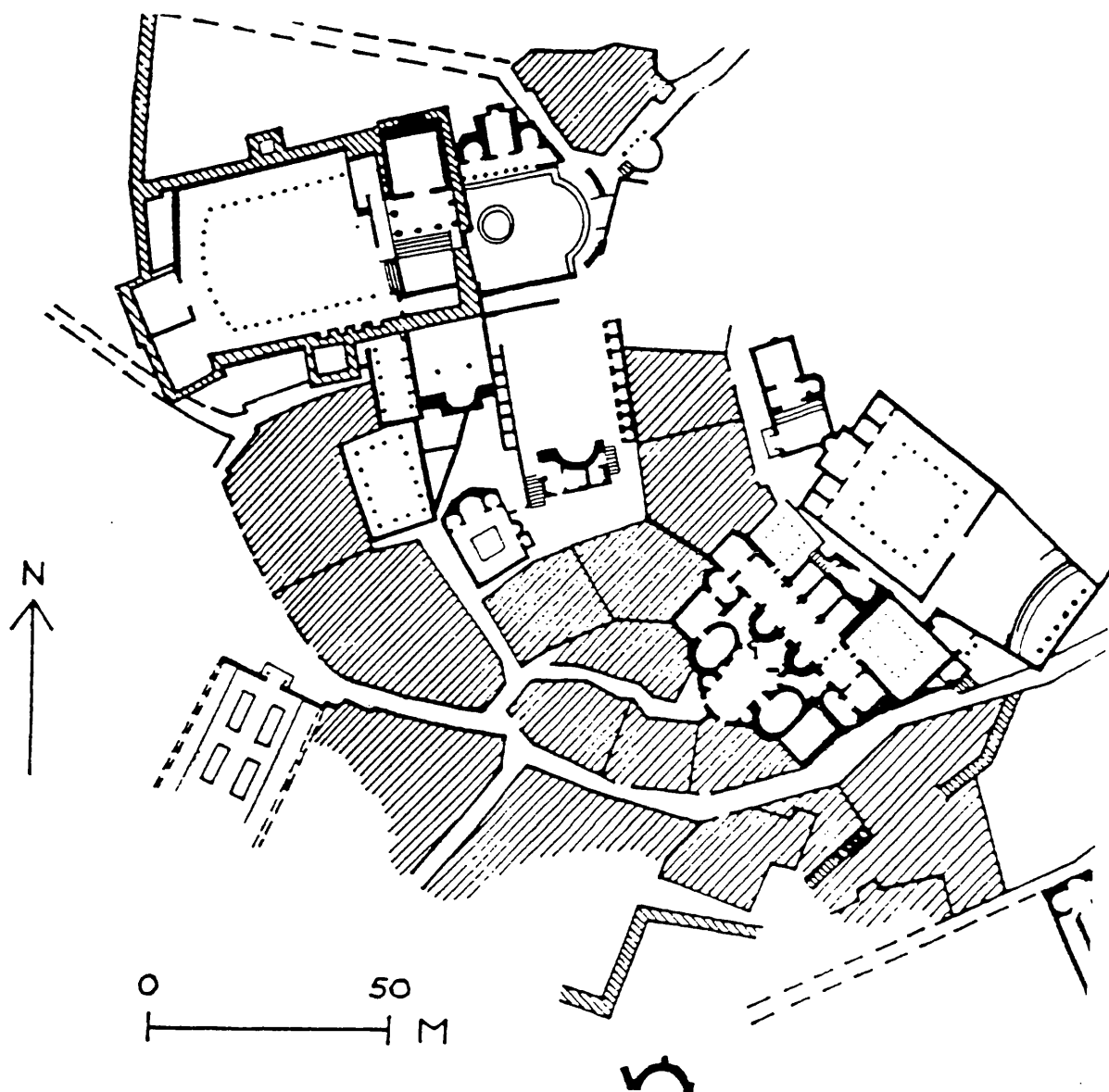


Figure 44: Plan of Dugga, where the Roman town grew up among the un-Roman winding streets of its Numidian predecessor

roads to the site are plotted, depending on location, for the import and export of goods. His instructions on foundations, wall thickness, angles, towers and gates are thorough and reflect, in my opinion, his experiences as a military engineer under Caesar. It is the third rule, the layout of the town, where he expounds his most radical idea and one which again indicates his concern for environmental matters, this time the wind. The adoption of his layout for the town will carefully shut out the wind from the alleys. As support for his idea he cites the town of Mytilene on the island of Lesbos which he claims is not situated with prudence.¹³ I do not propose discussing his support for Andronicus of Cyrrha's theory of eight winds on which Vitruvius bases his calculations for the division of the area within the walls thus shutting out the wind. What I find surprising is that he makes no mention of the traditional Roman ritual for establishing a new town with the ploughing of the sacred pomerium nor does he mention the layout of the Roman castrum, a system well established by his day, or the Hippodamian system. These are strange omissions as one would have expected critical comment from Vitruvius if only to favour the advance of his own idea. It is claimed that the architecture of the Roman colonies in Africa reflected the influence of Vitruvius, we know Vitruvius served under Caesar in Africa, and this claim is based on Dougga but an examination of the plan of Dougga does not show the application of the principle of the 'Circle of Winds' while the traditional lines of Roman construction of blocks and rectangles imposed on the Numidian predecessor can be clearly seen.

¹⁴ (See Figure 44)

While he is so explicit on the three basic rules he deals in a very summary manner with the location of the forum and other public buildings with no discernible attempt to place them in his 'Circle of Winds' theory. In fact he says if a town is located on the coast then the Forum should be next to the harbour, if a town is located inland then the Forum should be in the middle of the town. This is not the sort of professional advice I would expect of an architect submitting a radical plan for the layout of a town or city. In the siting of temples he is more forthcoming, they are to be built on the highest ground from which most of the defensive wall can be seen, some shrines are to be located beyond the defensive wall, but he again does not discuss the relevance of these somewhat arbitrary locations within the context of his 'Circle of Winds' theory.

Vitruvius describes architecture as being broken into three parts of which building, as one part, is covered by the first eight Books, Dialling, as a second part, in Book IX and Mechanics, as the third part, in Book X.¹⁵ While I agree the supply of water is an absolutely essential requisite of

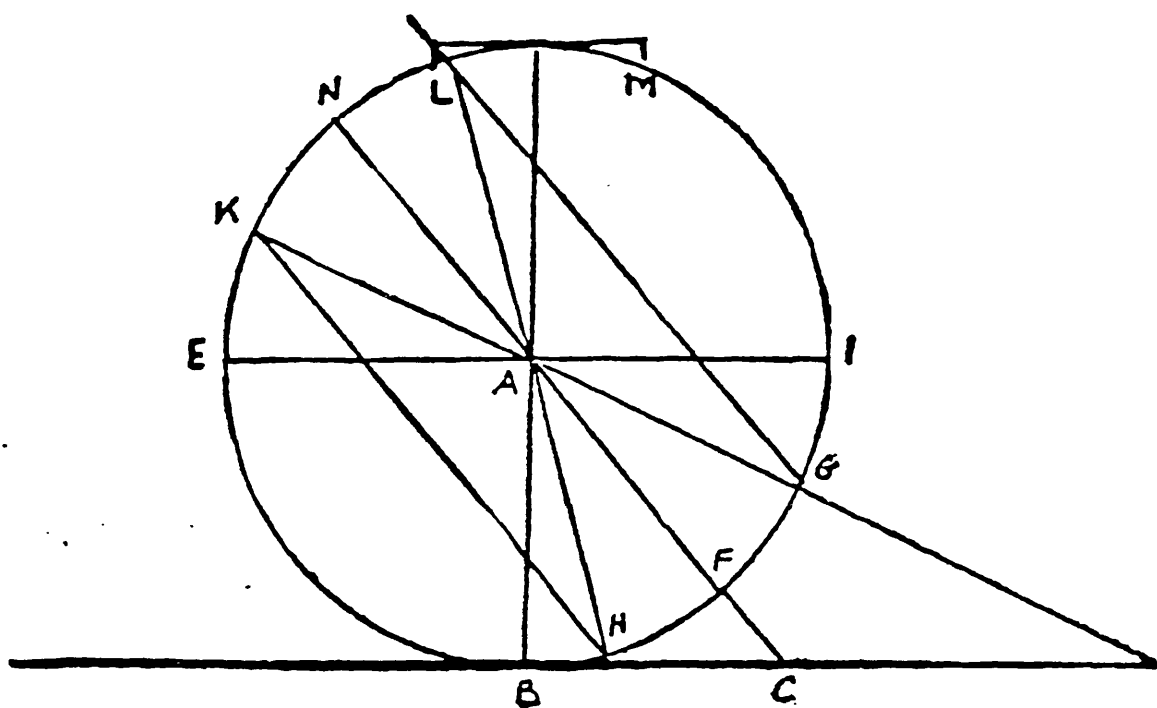


Figure 45: Analemma: Latitude of Rome
Book IX. Vii. 1 ff

AB	Gnomon	CFAN	Equinoctial Ray
BC	Shadow	GAK	Winter Solstice
EI	Horizon	HAL	Summer Solstice

any existing or new town my opinion of Book VI is that there is a strong environmental base in his very detailed description of where water might be found, the importance of soil conditions through which the water comes which can affect the quality of the water, the possible curative properties of certain waters, the deleterious effects of other certain waters and it seems to me that this Book is not properly associated with building. His concern that only the right quality of water should be brought in to a town is shown in his comments on the testing of water and only then does he turn his attention to the technical problems of introducing a supply of water to a town from sources near and far. This is really a subject which qualifies as a fourth part of architecture one which is really a job for a specialist and one who would have the necessary engineering skills. Worthy of observation is his method of distributing the water in three ways, the first to fountains and pools for free consumption, the second to baths which are charged to provide public revenue and the third for private supplies who then contribute by the water rate to the maintenance of the aqueducts.¹⁶ It appears that water rates were as contentious in Vitruvius' day as they are in our society today.

That Vitruvius had great respect for those who committed their thoughts, ideas and calculations to writing not only for the information of their fellow men but for the benefit of future generations he makes abundantly clear throughout his manual and nowhere more so than in his Preface to Book I which deals with the subject of dialling as he terms it. In Book I he had already stated that the complete architect was one who among several subjects to be acquired had to be familiar with astronomy and astronomical calculations and Book I furnishes the reason for such a skill. He deals at some length with astronomy, the signs of the Zodiac, astrology and the northern and southern constellations before turning his attention to the principles of dialling. That it is important to be able to ascertain the time of day, the month and year provokes no argument but I do not consider this to be a necessary part of the complete or qualified architect yet perhaps the perception in Vitruvius' day was different, there is no doubt he thought so. He comments on the shadow of the gnomon at the equinox and it is by the analemma that the hours are marked in accordance with location and the shadow of the gnomon. Unfortunately his diagram is lost and it is not possible to reconstruct the diagram with absolute certainty.¹⁷ (See Figure 45)

He goes on to describe various dials which have been invented, again naming the inventors and giving credit where it is due, then he deals similarly with water clocks. In Book X he describes

what the principles of machinery are and the rules that guide them, both for peace and war, and this to round off the completion of his treatise.¹⁸ While I doubt that machines of peace and war have a proper place in a treatise on architecture it may well be that in Vitruvius' day the construction of such equipment may have been construed as part of the architect's remit. I believe this Book is primarily designed to illustrate his own expertise gained in the army under Caesar and Augustus. The general consensus of opinion is that Vitruvius was an architect but I do not wholly agree with this view. I consider Vitruvius was more engineer than architect and this is borne out by his military career which is continued in retirement under Augustus when put in charge of the construction and repair of balistae and scorpines, machines of war. Further, in our concept of the architect, we know of only one building constructed under his supervision, the basilica at Fano. His 'Circle of Winds' theory was never adopted, at least the evidence available to us at this time confirms this position. That he was not an architect of status, as he admits, is the unavoidable conclusion but that he was a proficient engineer/architect seems not in doubt serving under first Caesar and then Augustus. His manual is of value to us as it is the only surviving manual on Roman architecture which has come down to us and while it is clear that, in Vitruvius' opinion, there were many unqualified practitioners equally we are indebted to him for what information he provides on his sources which include architects recognised as such by him. I have already said and it must not be overlooked that what we have is one man's opinion of what makes an architect but this does not reduce its value though we may legitimately entertain reservations as to why he wrote his manual.

What is frustrating is that while Vitruvius gives in great detail an account of the skills and learning which will produce the rounded architect he is somewhat vague as to how the skills and knowledge are to be gained. He should be a man of letters¹⁹ which suggests what would then have been the standard education of the well born Roman in grammar, dialectic and rhetoric but he also had to have a natural gift, to be a craftsman;²⁰ these seem to be the basic requirements. To these skills there must be added a knowledge of mathematics (geometry and arithmetic), draughtsmanship, history, philosophy, medicine, law, music, astronomy and to be familiar with scientific works (technical advances).²¹ It is a formidable list yet one where he qualifies his requirements by asserting that one does not have to have a complete knowledge but only a moderate knowledge of these many disciplines.²² What is somewhat ironic is that it is Vitruvius' own description which leaves us in some doubt as to what is meant by 'moderate knowledge' more so when he refers to his being an architect 'who has a mere tinge of these things'.²³ Does

this mean he did not meet his own standards or is it a deprecatory comment designed to ward off any subsequent criticism of his manual from his contemporaries, we shall never know.

What the manual of Vitruvius does give us, though not in a direct manner, are the avenues available to those who wish to pursue the career of an architect and they can be briefly summed; private study of the arts followed by apprenticeship to a recognised architect; joining the military and receiving training which would include construction and maintenance of camps and defensive colonies; both of these avenues would have been available in the Late Republic. In the early days of Empire a third avenue would be joining the Imperial building and maintenance services. ²⁴ These avenues to qualifying as an architect are attested not only by Vitruvius' information but by what we know of the administrative composition in the governance of Rome and it is claimed that Vitruvius himself was exercising these three options during the course of his career. ²⁵ We know of both Roman and Greek architects over the last five hundred years or so from about 500 B.C. down to A.D.1 but we have virtually no information on the method of training of Greek architects though the possibility of workshops, as in other elements of the arts such as sculpting and ceramics, cannot be discounted. That Vitruvius drew heavily on treatises written by Greek architects well before his time can be seen from his own manual and this is true also of Greek technical and philosophical sources when he refers to such famous names as Plato, Archimedes and Aristotle to name only a few. In the Preface to Book VII he pays handsome tribute to his named sources in various disciplines but especially in architecture where he names fourteen architects and their particular works which were well known in their day. One Greek architect clearly admired by Vitruvius, he mentions him by name on five occasions, is Hermogenes who worked in Hellenic Asia Minor. Hermogenes published treatises on his pseudodipteral Ionic temple of Diana at Magnesia and his monopteral temple of Father Bacchus at Teos. ²⁶ Not mentioned by Vitruvius in the foregoing list of architects is Hermodorus of Salamis who was the first Hellenic Greek architect to build a public monument in Rome, though he cites Hermodorus' temple of Jupiter Stator in the Portico of Metellus as an example of a peripteral temple, but makes no reference to the fact that Hermodorus had achieved a unique first. ²⁷ This is not the position when he describes the completion of the temple to Olympian Jupiter at Athens by the Roman architect Cossutius. ²⁸ That he is Roman as claimed by Vitruvius is supported by the honorific statue base found on the site which bears the inscription 'Decimus Cossutius Roman Citizen'. ²⁹

While we have a great deal of information on both Greek and Roman architects of the second half of the first millennium B.C. yet there remain considerable areas where information is limited, if non-existent, and the point has been made that of the great public buildings and monuments of the Augustan era we do not know the name of any architect who was responsible for conceiving and designing the Ara Pacis, Augustus' Forum and temple to Mars Ultor, Augustus' Mausoleum or any other surviving Augustan monument; why this should be so is extremely puzzling.³⁰ It may well be that this omission of the names of responsible architects was deliberate in concentrating attention on the patron of the project and prominent among the benefactors was Augustus himself who emphasises his achievements in his *Res Gestae* when he claims that he had found Rome a city of brick and left it a city of marble. It is one possible explanation for the total absence of information on the architects of these great monuments.

Housing is of particular interest to me and I have already given some consideration to Book VI but I find Vitruvius' approach to both the house and the insula to be disappointing. There are no historical references and there is no mention of any notable houses either of his day or of earlier times. There is no mention of any architect who may have contributed to some significant architectural detail but he tells us what type of house he considers appropriate for different ranks of society. His brief description of the insula or apartment block lacks any real enthusiasm for this type of construction though he acknowledges the demographic need for greater housing provision in Rome.³¹ Throughout his manual Vitruvius was extremely diligent in acknowledging his sources, that is, with the exception of Book VI where there are no acknowledgements whatsoever. His Preface has no relevance to the subject of the domus, rather it is extolling the virtues of what he determines is a bygone age, he gives credit to his parents for his upbringing and education, then he advances a reason as to why he is unknown. That he deals with the mechanics of building the various types of atrium house in both city and countryside and with the layout of a farm which combines the house with the necessary buildings to meet the needs of the particular agricultural activity in a detailed manner is not in doubt. What is peculiar is that he makes no reference on how the Roman atrium domus or the Greek mansion evolved, he shows no interest at all. He says here is the atrium house of whatever type and this is how you build it. There is no mention of the influence of early Etruscan architecture on the Roman atrium domus yet he highlights the courtyard as the basic unit in each of the five styles of atrium domus, a feature of Etruscan architecture and one extending back to Marzabotto.

How do we assess Vitruvius ? That his style of writing is confusing in places presents some problems yet his adherence to his own rigid standards is attested by his meticulous detailing of his sources and there is no ambiguity here. While his precise details for the design and construction of temples leaves very little room for confusion and rests wholly on his sources yet it seems a reasonable assumption that he was never involved in any temple project, a painter without a canvas. That he was an environmentalist seems beyond doubt. Then we have the anomaly in that he acknowledges the injurious effects of lead on water: ³² it is less wholesome and harmful to the body, but he continues to advocate the use of lead pipes. His traditional stance on his profession while admirable in attempting to set standards for his profession is, in my opinion , demeaned by his personal and petulant comments on his contemporaries but he does not name them. Yet his manual, as I have said, is valuable to us as it gives us some understanding of the profession of the architect in the closing days of the Republic. I have already made the point that the manual presents one man's view of the profession but that does not detract from the value of Vitruvius' treatise as a window into the profession of architect as he saw it.

Chapter 8

Conclusions

How societies evolve is relevant to my purpose of establishing that connections and links do exist between societies and those connections and links take a recognisable form when considering two of the building blocks which are an essential requirement of any society and they are the house and planning. Though each society as a whole is involved in the evolutionary process an essential factor is the architect to give the necessary physical form or expression to the perceived requirements and concepts of each society. Without the house and the planning to accommodate the house in that society's particular field of activity then we do not have the vital structure which can shelter the nuclear family or give the family a base which enables them to pursue and plan for their needs, both physical and spiritual. There is no disagreement that agriculture is the key to the revolution which converted the Mesolithic to the Neolithic, from hunter-gatherers to farmers, and it would not be an exaggeration to compare the advent of agriculture in importance with the Renaissance of the Middle Ages A.D., the Industrial revolution of the 19th century A.D. or the Technological revolution of the late 20th century A.D. and one which is continuing. Each of these revolutions had a major impact on humankind, on their way of life and on their beliefs, and the impact was reflected both in the house and in planning, the practical aspects being interpreted by the architect and reflecting the philosophy of each age. But it is with the agricultural revolution, its beginning and advancement through the centuries down to A.D. 1, its impact on the various societies over those centuries with which I am concerned.

I chose to consider the LBK culture as it is one of the earliest known agricultural societies of the Neolithic period in the western world embracing both agriculture and pastoralism. Their long-house is an intriguing building on several counts; construction, layout, orientation, the deposition of waste material and the possible hierarchical arrangement within the extended family. The construction of these long-houses, the largest of which we know measured some 45 metres in length and some 8 metres in width is significant. They were constructed of timber with pitched thatch roofs and the skills necessary to build such structures which could withstand the elements are remarkable in a society where communities, judging from the settlements we know, were relatively small in numbers. The layout distinctly shows a degree of planning allied to their

building skills, the enclosed northern end bears a strong resemblance to the much later Greek apse building, the tripartite layout suggests the early forerunner of the Mycenaean megaron and while no direct link exists that we know of these are valid comparisons. The significance of the Y section (the central room) eludes us, it may reflect an element of their belief or indicate some hierarchical order within the extended family but whatever the reason there can be little doubt that the Y section was important to the LBK peoples and what we might be witnessing is the first sign of belief associated with the home. The long-house is of importance as it illustrates the value of the two building blocks, the house and planning, at the virtual beginning of sedentary society. The house meets not only the practical needs of that society but is planned to encompass their belief. The architect has not yet made an appearance but architectural skills are being acquired as the long-house so positively demonstrates.

The LBK culture travelled north and west but in considering Çatal Hüyük I move south and east to a different climate zone which poses its own particular problems. The society of Çatal Hüyük occupies a Tell, that is, one layer of occupation is on top of another but the successive layers of occupation use the same manner of construction with houses and shrines being of timber frame with walls infilled with sun dried rectangular mud bricks, internally finished with plaster and flat roofs of timber framing and reeds with an external finish of sun dried mud. The houses and shrines were of individual construction with stepped levels of roofs to provide natural light internally, a clerestory type of construction. Over the various levels of occupation the external appearance of the Tell remained the same suggesting that fear of attack must have consistently influenced their style of life. From what has so far been excavated it appears that the house and the shrine were structurally the same and virtually the same size, the only difference being in their decoration and that burials in the shrine were accompanied by artefacts while burials in the house were not. Another feature was the courtyards incorporated in each level of occupation within the Tell though as yet the use to which these courtyards were put is not known. The courtyard is a feature which is common to the successive societies I have considered and one may see a connection with the atrium domus which, according to Vitruvius, was based on the courtyard. What is apparent in a community which is much larger than the LBK at, say, Elsloo in Holland, is that planning is clear in the development of each level in the Tell, it is a fairly sophisticated level of planning in what I have already suggested appears to be an egalitarian form of society. Nothing has yet been found to suggest that an elite had emerged other than the

multiplicity of shrines may point to a priest class within the society but nothing found indicates any difference in status apart from the artefacts accompanying burials in the shrines.

It had an agriculturally based economy but there is evidence that the community also produced textiles and their own pottery. That it was a progressive society is borne out by the evidence of metalworking in copper and lead and this may indicate trading was taking place to acquire the raw materials for this process. What can be said is that this society is much further advanced than the LBK yet there are similarities which must be acknowledged. While there are separate shrines, the house itself is a form of shrine, it is where the family unit worship their deities and it is a planned environment. That the LBK had a planned environment is clear and that environment embraced their beliefs so far as we can tell. In each case the house is planned and there is the necessary expression of their beliefs but in Çatal Hüyük the planning goes beyond the house and relates to the whole community. While there is no evidence of an elite the excavation illustrates an order in its layout and construction which reflects a source of control such as a council of elders or, if there was a priest class, the chief priest, but only further excavation may provide answers.

How societies evolve and progress is a much debated subject and many views have been advanced which deserve respect. There must have been a continual exchange of ideas and processes achieved as a natural by-product of trading activities with other communities both near and far. Çatal Hüyük is an example of the process when they commence metalworking which requires not only a supply of copper and lead but also a knowledge of how to work the metal. This is true of other aspects of societal life including the house and planning and is perhaps more clearly seen when considering the Minoan civilization and its successor the Mycenaean civilization.

In considering Myrtos on Crete I was conscious of the comparison which can be drawn with Çatal Hüyük and Myrtos, while constructed on one level only, has comparable features. There is the virtually continuous wall encompassing nearly one hundred rooms, linking passages and open areas which could be described as courtyards. The major differences are that there is only one shrine room, not the multiplicity of shrine rooms as at Çatal Hüyük, and the emphasis of their beliefs now appears to be expressed in a female deity, the Goddess of Myrtos, as opposed to the rites of fertility expressed both in the house and the shrine at Çatal Hüyük. The construction of

the settlement shows some form of planning though there is no evidence to support the emergence of an elite group and while it is a somewhat haphazard form of planning it achieves its aim to keep the community integrated and together. The economy is based on agriculture with wine and oil being produced as were cereal crops. The community were also spinning and weaving and they produced their own pottery but while some copper tools were found no evidence of metalworking was found. The main difference between Myrtos and Çatal Hüyük is the introduction of the anthropomorphic god and the manner of expressing their belief appears to be communal but beyond that the discernible differences are minimal.

In the First Palace period, shortly after the abandonment of Myrtos about 2200 B.C., there is a distinctive and radical change in society with the emergence of an elite which is attested by the building of the First Palace of Knossos. The archaeological evidence shows that this was a large group of buildings, linked together, surrounding a central courtyard. The skills of the community have developed considerably and the pace of advance in this early Minoan civilization is really remarkable in such a relatively short period of time, when measured from Myrtos. Not only is there an elite, they proclaim their power in the physical structure of the Palace, and the architectural advances are quite dramatic. They are building in stone and the engineering advances are equally dramatic. There is nothing in the archaeological record to explain how the elite arose and while both Herodotus and Thucydides mention King Minos of Knossos and the tradition is to link him with the First Palace period there is no evidence to confirm this.

The first palace, the Palace of Minos as it has been called, was succeeded by the great Palace of Knossos, correctly named as it was the largest palace on the island at this time. That an elite existed is shown from the archaeological remains, not only is the ruling family occupying the palace but their advisors, administrators and other top officials are occupying large houses in the town of Knossos, close to the palace. These are two and three storey rectangular buildings of clay brick and timber tie beam construction though we have no knowledge of what the internal layout may have been. There is evidence of little chapels in these houses as well as the Palace sanctuaries which can be compared to the shrine rooms and the houses in Çatal Hüyük though the deities are different. While the Great Palace incorporates parts of the First Palace it is in architectural terms a superior building in many of its features and it demonstrates a continuing expansion of architectural and engineering skills. Again there is the comparison with the courtyards of Çatal Hüyük though I consider the central court at Knossos was essential as a

source of light and air in what was a massive building complex but the comparison is valid, it is a more ingenious use of the courtyard.

The Minoan civilization is a much more advanced culture than that which existed at Çatal Hüyük and while it is still an agriculturally based economy it had developed its metalworking skills to a great extent, the base of its great wealth. They also had developed wall painting, yet another comparison with Çatal Hüyük, in an exceptional manner as we know in the evidence remaining to us. That they were trading extensively not only on mainland Greece but throughout the Aegean and eastern Mediterranean is well established and such trading would not only disseminate their own knowledge and skills in architecture, engineering, the arts and metalworking but would also enable them to accumulate fresh ideas, methods of working, new approaches to promote the advance of their society. It is known they greatly influenced the emerging Mycenaean civilization on mainland Greece a fact which supports my contention that societies could and did contribute to the advancement of their successors.

That the Mycenaean civilization was much more aggressive is borne out by the changes that can be seen in their architecture which, in the regional centres of power, had, with one exception, strong defensive perimeters, a feature which is not seen in the Minoan regional centres of power. I have concentrated on Mycenae as it appears to be the dominant kingdom among the many Mycenaean kingdoms we now know including Athens which seems to have been one of the minor kingdoms. The concept of regional centres may well have been taken from the Minoan system but was refined to meet the requirements of the Mycenaeans. Architecturally the Mycenaeans exhibit further advances on the Minoan achievements, not only were the palaces or citadels situated on strategically prominent hills, they were protected by massive cyclopean walls, still to be seen at Mycenae and Athens. It is now we see the emergence of the long room or megaron, as it is called, though the courtyard is still an essential feature of the layout. In the courtyard we have a form of continuity with the Minoans at Knossos, earlier at Myrtos and , yet further back, with Çatal Hüyük. This is equally true of wall painting and I have already suggested the megaron is not dissimilar to the LBK tripartite long-house. We do not know of earlier written documents in these civilizations until the Linear A script which Sir Arthur Evans saw as a possible development from the first stage of hieroglyphic signs and what has been found suggests it was used for administrative and business purposes but we do not know as the script has yet to be deciphered. We know of nothing which would indicate that architectural principles

were in any way recorded. This poses the question of how knowledge was transmitted from one generation to the next, from one society to another and my argument is that there were two routes for the passage of knowledge and skills. The first route was the oral tradition which served to preserve the lineage of the family unit and their connections with other members of the community, it was used to perpetuate the memory of heroic deeds, of great tragedies and, generally, maintain a link with the ancestors and their past. In the absence of script this would be a completely natural and normal way of transferring knowledge down the generations or between societies and the passage of skills from father to son would be a part of that process. The other major route, to which I have already referred, would be through trading activities where the additional benefit would be the exchange of knowledge and skills between communities and societies.

We know that in the town of Knossos there were houses of two or three storeys but in Mycenae the houses of the elite are found within the citadel and close to the palace and while the larger of these are also two and three storeys there were smaller houses which presumably accommodated the lesser officials. The larger houses all had megaron type rooms but I referred to the House of Columns which was shown to have an orsothyre, a side door, which was not observable from the front or main entrance. This is not a common feature of the Mycenaean megaron yet Homer in the *Odyssey* gives a very explicit description of an orsothyre in the great hall or megaron in the Palace of Ithaca. It is my opinion that this is another example of the oral tradition at work when Homer commits the story to papyrus. I am aware that I have drawn a very tenuous link when I compare the megaron to the LBK long-house but the similarities are there and are perhaps emphasised by The House of Tiles at Lerna which itself is a link with the now former Minoan civilization. What the evidence remaining to us does show was that the architectural and engineering skills in both the Minoan and Mycenaean civilizations were of an extremely high standard and I argue that their principal buildings, the palaces, not only have the public rooms to emphasise their power but in the shrine rooms the necessary connections with the appropriate deities and in the various administrative and other rooms the practical base to exercise their monarchical power. These were monumental buildings and what we have in the remains of these monumental buildings is testimony to their skills.

To substantiate my argument I considered it necessary to examine the so-called Dark Age as the general perception seems to be that the destruction not only ended a great civilization but

heralded a period when not only was the structured order of society dissipated but the main concern was survival. There was not only the loss of writing, there is no evidence that Linear B survived the destruction, communities were destroyed or broken up, trading connections were lost and, in general terms, the position was a disaster. What we now know suggests, indeed, proves the destruction, great as it seems to have been, was not complete and life did continue, no doubt in smaller communities and probably in less amenable circumstances, but survive and prosper they did.

My reason in considering Zagora was my view that this was a settlement which exhibited the main requirement of safety and its location on a headland would give it an 'early warning' system of approaching danger from the sea. It had both natural and man-made defences and it had the necessary ground in the immediate vicinity for both agriculture and cattle raising, a requirement noted many centuries later by Vitruvius; the one essential not present within the community was water though four sources of supply were reasonably close to the settlement. The housing so far excavated is of the 'megaron' style but in much more modest dimensions and I believe this style was deliberately adopted as it fitted conveniently into what I consider is a planned interconnected block of houses and courtyard. Two interconnected blocks have been excavated and both have these links with the former Mycenaean palace, the 'megaron' style and the courtyard. What does not seem to be part of the community are elite houses, houses of note, and while there is a wide variation in house size this may simply reflect the varying sizes of the occupying families. In my description of the type of construction with flat roofs designed to shed water into pithoi and then stored there is another example of planning. We do not know what cult was practised, though it seems certain that the cult was common to the whole community and while it may, as the excavators say, have started on an open sacred enclosure, it is a definite departure from what we know of Mycenaean practice.

Lefkandi is in a slightly different category in that it initially survived the destruction of around 1200 B.C. but was eventually destroyed at the end of the 11th century B.C. From the artefacts recovered a new community seems to have re-occupied the site in the last quarter of the 10th century B.C. It appears to have been a prosperous settlement judged by the gold artefacts which have been recovered from graves so far excavated. We know virtually nothing of the housing at Xeropolis mainly as a result of the excavations being concentrated on the cemeteries lying to the north of modern Lefkandi. What little excavation has been done shows from the fragments of

moulds recovered that a bronze foundry was in operation and this could indicate that contact with Cyprus , one source of the raw material, had been re-established. This suggests trading of some sort had restarted, a likelihood further supported by some of the grave artefacts which have a Near East or Egyptian origin.

The main interest at Lefkandi is centred on the building accidentally discovered at and abutting the west end of the Toumba cemetery. There are a number of intriguing features in this building which I have already briefly discussed. I would argue that these features have a connection, a link with preceding cultures which cannot be ignored. It is considered that this building was constructed in the period 1000-950 B.C., it is a 'long-house' being some fifty metres in length and with a maximum width, including the veranda, of almost fourteen metres. In its internal layout it very closely resembles the Mycenaean megaron and as I have already implied the megaron may have its origin in The House of Tiles at Lerna in the Early Helladic period, c2500-2200 B.C., but the Toumba building may be termed a modern version. What is unique, according to the evidence we have, is the veranda surrounding the building with the exception of its east end. It is J.J.Coulton who makes the observation that the veranda can be connected with the characteristic peripteral temple of later Greek architecture yet concludes that the veranda is a feature of high status domestic architecture. I accept that this is a possible hypothesis subject to the caveat that this is an entirely new feature, one which we have not seen in the architecture of the earlier cultures I have considered, nor do we have any evidence that this feature can be associated with the architecture of the elite at this time. That it is a special building and of considerable importance seems beyond doubt but what sort of building was it? A question which is not really answered by the excavators. While the veranda constitutes a link with the later peripteral Greek temple it is their conclusion that it is not a temple, yet it does not measure up as a house notwithstanding the legitimate comparison with the earlier megaron and the grounds for that decision are acceptable. The conclusion they reach is that it is a funerary house, a heroon which is the last resting place of some great warrior and possibly his spouse and based on the evidence of the burial shafts in the central room then one can say that this is a reasonable hypothesis. Yet, like the pteron or veranda, the earlier cultures I have considered do not provide any evidence of funerary buildings or heroons, there are no forerunners of this type of building, excluding the megaron. It is D.S.Robertson who draws attention to the South Propylaeum of the Great Palace of Knossos 'as a remarkable forerunner of the classical Greek type of propylaeum', and I consider it is feasible to draw the comparison that the Toumba building is also a

remarkable forerunner of the later peripteral Greek temple. I base my reasoning on the accepted fact that this is a special building designed to contain a possibly heroic person in life together with his probable spouse, it draws on oral history thus its similarity to the megaron. The house has the orsothyre or side door on its south elevation where it cannot be seen from the front entrance which equates it with the House of Columns and the Palace of Ithaca. It can be argued that the addition of the pteron or veranda is an external indication of the importance of this building. While the burial shafts are of great interest they are not relevant to this thesis other than as another indicator of the oral tradition continuing the influence of the past on the present. The excavators draw the parallel with the funeral of Patroclus in the *Iliad* and while we do not know when the Toumba building, after the burials, was partially dismantled and then buried under a tumulus, this is another sign of the importance of this building. There seems to be no significance in the orientation of this building though its position adjacent to the Toumba cemetery which, of the six cemeteries found, contain the richest artefacts may point to an elite in this community. One other feature requires comment and that is the apsidal west end of the building, a feature not seen in either the Mycenaean or Minoan cultures yet this was a feature of the LBK long-house and also a feature of the long-house which had an apsidal and rectangular plan found in the Peloponnese in the Early Helladic period c2200-2000 B.C. A possible reason for the appearance and disappearance of architectural features may lie in the requirements of the culture of a particular period where their needs are not satisfied by earlier architectural achievements.

Athens was yet a different choice but one which could not be ignored as she represented a direct link with the Mycenaean culture and even earlier with links to the Neolithic, though continuous occupation cannot be confirmed, but most importantly she appears to have evaded the worst of the destruction. The Mycenaean connection is attested by not only the remains of the defensive perimeter of the Acropolis but in the well shaft constructed within the defensive perimeter. Both the defensive perimeter and the staircase constructed within the well shaft confirm that the architectural skills observed at Mycenae are present in Athens. That changes were taking place can be seen with the introduction in Athens of cremation at some point in the 11th century B.C. and the beginning of the Protogeometric period in pottery and ironwork skills. I have already suggested that the Athenians were accepting and integrating the culture of the new arrivals and it can be seen that Athens towards the end of the 11th century B.C. was growing in importance

and influence in the Greek world. It is reasonable to assume that she had resumed trading as attested by the new pottery style which was soon seen in areas such as Argos and Boeotia.

A social order of some form must have existed to enable Athens to continue and to grow in importance yet there is no evidence either archaeological or otherwise to substantiate the existence of an elite nor has any archaeological evidence of a palace on the Acropolis been found as has been found at other Mycenaean kingdoms. We know virtually nothing of the housing for the lower orders, though we know housing did exist at the bottom of the southern slope of the Acropolis. We know nothing of any local cult or deity but this may just reflect the paucity of material evidence relating to this period. There is no evidence of planning of a structured nature yet there were roads and streets, defences were maintained and trading must have been expanding as shown by the grave goods found with the female burial I have already described.

While noting that changes are taking place during the Dark Age in Zagora, Lefkandi and Athens it is during the Archaic period that I believe the most important changes occur, changes which affect most aspects of life either immediately or in the longer term. There are a number of important changes on which I have already commented but I am of the opinion that the appearance of the temple is the most important change. The temple is the community's expression of their belief, it is a unifying symbol which brings the community together sharing a common belief. It does not exclude or prevent the individual from pursuing his own personal belief, but that belief is subsidiary to the common cult. The community's common belief is contained in the house which occupies either a recognised sacred area or a prominent position in the town, it is the house of their deity. The house itself has to be different, to be special, to be separate from all other buildings if its message is to be clear both to the community and to the wider world and it is these reasons which in my view give us what is a distinct form of architecture in the temple. I have discussed the appearance of the temple where the main emphasis began in the 7th century B.C. but it is the earlier house/temple where new ideas are seen to be tried and difficulty is now experienced in determining whether the building is a house or temple. From what little evidence we have there is a strong argument for the house, that is, the large house, the house of the elite, as being the base or role model for the temple and I have referred to the Aetolian sanctuary of Thermum and in particular to the buildings known as Megaron A and Megaron B. These buildings bring into sharper focus the Toumba funerary building or heroon but as evidence for the appearance of the temple in the 11th-10th centuries

B.C. it is not strong but certainly suggestive. What must be beyond doubt is the connection, the link, between the house and the temple and it would have been important as a link in the establishment of the common cult in the community. It has a relevance to the individual and it provides a form of domesticity to the deity.

Another change is the introduction of stone in the building of temples and this begins at some point in the 7th century B.C. with a good example being the temple of Apollo built in the centre of Corinth early in the 7th century B.C. which I have discussed. It is an age of innovation in many fields and temple architecture was no exception; and while temples were mainly rectilinear and rectangular in shape there were many variations of this layout.

The evidence on ordinary housing is still very scanty and on elite housing within the city boundary virtually non-existent but we do have some evidence in the Geometric house dating to the first half of the 7th century B.C. which was found on the north slope of the Aeropagus. I have already cautioned on using this find as being typical of Athenian housing at this time but it is a reasonable assumption it would not be untypical of ordinary housing. It is unfortunate that no direct comparison can be made with the housing stock at Mycenae or Knossos but it does give some idea of the living conditions of the ordinary people.

There is no evidence of any form of planning and yet some type of control must have been exercised which enabled this society to develop its ideas and skills. That there were roads and streets is known and it is likely that the Street of the Panathenaia was in existence in some form by the 7th century B.C. It served as the main access from the north-west side of Athens leading to the Acropolis with the Agora, at that time, lying to its south-west. While it is not certain, it is likely that the Agora started life as purely a market place but it began to assume an importance in the life of the city. By the end of the 6th century B.C. it is known that lying at the foot of the east side of the Aeropagus there was the Prytanikon, the Bouleuterion, two temples and the Royal Stoa and in front of them the Great Drain. This is the early beginning of what will become the heart of the city. These are public buildings for the use of the people. As I have said there is no evidence of formal planning but there is planning of some sort which is bringing together the public buildings from which the affairs of the city are conducted. A comparison could be made with the regional centres of both the Minoan and Mycenaean civilizations, the Agora is a

recognised area, a specific point where the affairs of State and day-to-day business are conducted, the same functions which were exercised by the former regional centres.

It may be questioned why the Acropolis which most likely was the centre of the former Mycenaean regional kingdom did not continue in that role but we know the Archaic period to be one of great change and innovation. What must not be overlooked is it was, towards the end, a period of turbulence and where the demands of the people were becoming more articulate. There is no evidence of a Mycenaean palace or houses on the Acropolis but we know there was a temple, sacked later by the Persians, and we know there were many statues. The likelihood was that while it could not cope with large crowds it was still the centre for expression of their beliefs. It was still a defensible position, as attested in the Persian sacking of Athens and the Acropolis in 480 B.C., and while the affairs of the Polis are now carried out in the Agora the Acropolis still remained the moral heart of Athens.

The many changes we see in the Archaic period continue in the Classical Period, the 5th century B.C., and while it might be said democracy reaches its apogee it was also the century which saw two major wars, the Persian war of 480-479 B.C. and the Second Peloponnesian war 431-404 B.C., not dissimilar to our own experiences in the 20th century A.D., yet the pace of progress was maintained. I believe it correct to say that the main period of change took place between the wars and at least one element of change was possibly a direct consequence of Persian aggression.. I am concerned only with change in housing and in planning though it is proper to recognise that constitutional change together with the rise of Athenian power had a direct effect on monumental building.

In examining housing of the period, Athens does not provide any evidence of real note to judge what Greek housing was like and whether or not earlier cultures had any influence. This is not to condemn Athens as in a city of such antiquity, even at this period, it would have been virtually impossible to clear large enough areas to replace with planned housing blocks if such blocks had existed. Accordingly I considered Olynthus where development of a planned nature on the north hill was started around 432 B.C. and where the planning has a distinct orthogonal basis. There is no comment by ancient sources that Hippodamus was in any way involved in Olynthus even though it was around this time he was active in Piraeus and Thurii as the ancient sources advise us. It is credible to argue that Hippodamus' ideas are being implemented at Olynthus but I do

not believe, as I have already discussed, that Hippodamus devised the 'chessboard' or gridiron system and I have shown that earlier communities were, at the very least, experimenting with systems which would relieve or eliminate overcrowding in cities. I make two points here which I consider support my general argument, one being that planning is still an integral and important building block and the second is the continuing contribution from past generations or societies, the link or connection, with the present society. The second point is reinforced when studying the housing at Olynthus because, like the atrium domus to come, the courtyard together with the pastas is the core or heart of each house, and the courtyard, as has been shown, has now been with successive civilizations, in one form or another, since Çatal Hüyük. What can be claimed is that the housing at Olynthus reflects the changes which are taking place in that while the elite may still exhibit their wealth and power in occupying large and possibly more elegant houses wealth is percolating downwards in society and the lower layer, the middle class, are now exercising their desire for a better class of housing.

It is in the provision of public buildings that the Classical Period in Greece reaches to greatness and that greatness is vested in the public mind in the Parthenon, a truly exceptional building. It was not only in Athens that monumental buildings were erected but the focus is on Athens and the Parthenon in particular. It was constructed of the finest quality of materials and it was the architect Iktinos who designed the building working in conjunction with Kallikrates, the recognised master-builder. But temples were now a combination of both building and sculpture and the Athenians were fortunate to have Pheidias, the master-sculptor, and we know he was directly responsible for the cult image of Athena Parthenos, a commanding figure of ivory and gold some forty feet tall. Following the Parthenon at a date about 437 B.C. work started on the Propylaia under another outstanding architect, Menesicles, and the Erechtheum followed later, some say over the period 421-406 B.C. While the development of the Acropolis is the practical expression of Greek monumental architecture at its finest in the Classical Period it was as a consequence of political and economic need as perceived by one man, Pericles, though the decision to build was taken by the citizens in a democratic vote in the Assembly. Politically it gave public expression to Athenian power and economically Pericles was ensuring that some of the wealth acquired by Athens would be given to those citizens who were not in the armed forces. It cannot be argued that there was formal planning in the development of the Acropolis, but one does get the impression of a certain unity in the buildings constructed. One other aspect which should be considered is the public perception of power when looking at the Acropolis: it

is in a commanding position in the city, it can be seen clearly from the sea and its propaganda value would be priceless. In that I have shown the early and inextricable link between the house and the temple, it is perhaps a somewhat romantic way to say the house, the house of the god, has reached such a fitting eminence.

The Agora also continues to expand and change in this period all to the west of the Street of the Panathenaia though a courtroom was built to the north and east of the Street of the Panathenaia. Though it is greatly expanded, no doubt as a result of the economically prosperous years between the wars, there is no evidence of any formal planning and yet the disposition of the various buildings around the perimeter of the Agora, thus freeing the centre ground for public use such as games and festivals, suggests that a form of control and planning did exist. The Heliaia, the South Stoa, a fountain house and the Mint are ranged along the southern boundary and on the west side have been added the Stoa of Zeus, the Tholos and a new meeting building behind the Bouleuterion but possibly the most notable building is the temple on the hill to the west of the Agora. This is the temple of Hephaestus which was built just before the Parthenon and like the Parthenon its remains are with us today. It was dedicated to Hephaestus and Athena as joint patrons of crafts and like the Acropolis it is a further expression of the alliance between the State and cult belief in the exercise of power.

One final and very welcome change which should be noted is that the designers of some of these monumental buildings are now, to some extent, known to us and while we know very little about them as individuals we do now have some identifiable people. As there are no extant sources we do not know how they got their training in the profession, whether it was by apprenticeship or learning the skills acquired by one's own father. It is a frustrating gap in our knowledge in that the Iktinos, the Kallicrates and the Menesicles of the Classical Period were architects of great skill and vision to create the buildings standing to their credit and we still know so little about them. While there can be no questioning the monumentality of these buildings in design, materials and construction in Athens in the fifth century B.C., the Classical Period, they do not stand alone as a tribute to Greek architectural or engineering skills. I consider that Mycenae and Knossos are also examples of monumental building in design, materials and construction which show an equally high degree of skill and vision. While it is impossible to show on the evidence available to us today that there is the possibility of past architectural achievements influencing

the Classical Period, and other more learned scholars have commented on the remarkable similarities which exist, all I would claim is that the possibility exists.

In considering Italy and the Romans I have confined myself to a shorter time span but in a limited form of comparison with Greece I consider there are fascinating, almost similar, features in each culture. There is the uncertainty of the origins of either the Greek and Roman/Italic peoples, there is the same nebulous movement towards a form of democracy in the Archaic period, there is the birth of the Republic in Italy and the end of tyranny in Athens in 510 B.C. and it is at this point the two cultures diverge to pursue their own perceptions and ambitions. This may be described as a broad-brush overview but it is one which I think to be generally accurate.

My starting point was the Terramare in northern Italy, an identified subculture partly contemporaneous with the Mycenaeans who have an agriculturally based economy and a cult belief which, given the evidence we have, seems to have been common to the community. There is also the evidence of a form of orthogonal layout in the various communities of the Terramare, as attested by modern archaeologists, which makes an interesting comparison with Old Smyrna and Zagora though both these communities are somewhat later than the Terramare. I have already drawn attention to the burial of the dead out-with the settlement and while this may have been a decision taken on purely hygienic grounds (it would have ensured an environmentally better atmosphere within the settlement) it does have a resemblance to the exclusion of burial within the pomerium or sacred boundary. Perhaps more interesting is that the Laws of the Twelve Tablets were meant to regularise older unwritten laws of custom and we do not know how long these unwritten laws of custom had existed other than that burial was one of them.

That we know so little of the Villanovan culture, other than their pottery and that they were agriculturists, is of some regret but it is possible they subsumed the Terramare and were in turn assimilated by the Etruscans. I have already acknowledged the influence of Etruscan culture on Rome and the Romans and I accept that there is evidence of Phoenician and Greek influence on Etruscan culture but we now know that the Etruscan people were an industrious people who developed their religion, their art, their literature, which we do not yet properly understand, and their architecture. I chose to concentrate on Marzabotto which, while situated out-with the recognised Etruscan territory, was an Etruscan foundation. I have already described it as an

anomaly, it is like no other Etruscan city or town, it is much younger than other Etruscan settlements and, more significantly, it is not located on a strategic high hill, it occupies a relatively flat area of ground. It is situated on a recognised trade route, the salt route, and the location would have encouraged the planner or planners to provide a layout which would maximise the use of the site to the most advantageous effect. A possible argument would be that the proto-orthogonal layout of the Terramare has not been lost with the passage of time and that the topography of the later Etruscan settlements was not suitable for the imposition of such a system. It certainly predates Miletus, there cannot be a Greek influence, unless we include the efforts at Old Smyrna and Zagora, because there was no Greek orthogonal system existing at this time. This view is based on the dates of which we can be certain, Miletus starting in 474 B.C., Piraeus starting about 434 B.C. and Thurii at a roughly similar date with Olynthus commencing about 432 B.C. Marzabotto's dating is uncertain though the main opinion opts for the beginning of the 5th century B.C. while some hold the view it started in the late 6th century B.C. Whatever the final dating may be it is most likely to be earlier than the earliest known example of the Greek orthogonal system. It therefore seems reasonable to assume it is an indigenous invention by the Etruscans or the adoption of earlier attempts such as the evidence of the Terramare attest. The planning of Marzabotto is not only orthogonal but includes elaborate water and drainage systems serving the whole community. This is an example of planning for the benefit of the whole community which is not seen or found in other Etruscan cities or towns. This is not to say that such systems did not exist; it reflects the emphasis of excavation on their cemeteries rather than on the cities and towns of Etruria. It is reasonable to draw a comparison with the Palace of Knossos which also had a remarkable drainage system but I am not suggesting that the lessons of Knossos were imposed on Marzabotto. Finally there are the insula or housing blocks created by the orthogonal system and what is of interest are the courtyards around which the necessary accommodation was arranged. The argument has been advanced that the original house was a rectangular building consisting of one room which formed the basis of the Mycenaean megaron and the Greek temple and this argument has some merit. It is the courtyard which requires further consideration as there is no evidence of which I am aware which attests the courtyard existing in what might be termed ordinary housing earlier than this. It does not appear on the Greek mainland earlier than 432 B.C at Olynthus in the blocks built then and, of course, the courtyard is the core of the future atrium domus which general opinion agrees has its base in later Etruscan architecture as attested by Etruscan tombs and funeral urns.

Both Castellazzo di Fontanellato and Marzabotto may be considered contentious choices for the reasons I have described, but I consider each is an amalgam of both old skills and knowledge allied and adapted to new skills and knowledge to meet the requirements of their communities in their day and they, in turn, pass on their accretion of skills and knowledge.

From 500 B.C. to 1 A.D. the pace of change quickens and that change is major in most if not all fields of human activity and where relevant I have commented on some of the more radical changes with some emphasis on the political changes of the late 6th century and throughout the 5th century B.C. which directly or indirectly stimulated or may have even directed economic, social and cultural changes in both the Greek and Roman worlds. As in the case of Athens we know little about early housing in Rome other than that in the late Archaic period the ordinary house was a hut, either round or rectangular, constructed of timber with walls and roof of wattle dubbed with clay. On the evidence of Etruscan tombs and funeral urns we know the houses of the elite were large but no archaeological evidence has been found. The early evidence comes from the rock sepulchres found at Cerveteri and the cinerary urns at Chiusi, showing the house to be a single room in a rectangular building with a double sloped roof angled at a low pitch. What we do know is the development of the single room house to the un-roofed entrance hall, the small courtyard onto which open two lateral rooms with the main rooms at the rear of the house. The most common or popular type was the three rooms at the rear of the house, and its resemblance to the three-cell Etruscan temple has been noted, yet another example of the continuing link between the house and the temple, dated to the 6th century B.C. How the house continued to develop between the 6th and 3rd centuries B.C. we do not know, and this is a regrettable gap in our knowledge leaving our assessment of housing dependent on a relatively small number of reliable sources.

It is Vitruvius who advises us that the various types of atrium house are based on their courtyards and courtyards are not only a link with past Etruscan practice but can be traced back to Çatal Hüyük. There are a number of surviving atrium houses at Pompeii and to a certain extent at Herculaneum which provide excellent examples of how the rich lived in 79 A.D. together with how the poorer citizens of the communities lived and worked. What cannot be claimed is that Pompeii and Herculaneum are typical of housing generally throughout Italy though the view has been expressed that the oldest houses dating from the 3rd century B.C., were a clearly defined Italian type which was most likely to represent the standard form of

housing common to the peoples of central Italy. It is known that the atrium house existed in Rome and the layout of the houses enabled the Patrician to operate the system of clientela, an important element of political life in the Republic, but this type of house was for the elite; it could not be within the ability of the ordinary citizen to afford. While we do not know what sort of housing developed from the original hut of the earlier centuries the appearance of multi-storey housing is seen in the late 3rd century B.C., it is the answer to the growing pressure of an increasing population centred on Rome. It is one of the many radical changes of these times; the solution was to build upwards and so the insula was developed. It did not develop from the courtyard but the atrium house was known to have two storeys and this may have given the idea of further storeys to meet demand, but demand from the lower classes of society. Multi-storey housing is not unknown, that it existed at Mycenae and Knossos has been proved. It is known that in Rome in the mid fifth century B.C. there were laws governing the space to be left between buildings which may suggest that domestic buildings were already constructed over two and three floors designed to accommodate several families and the question of the right to light had already arisen and was occasioning dispute. So little is known of Roman housing in the Early and Mid Republic but it must be an acceptable assumption that laws as early as the mid fifth century were recognising the problem of higher buildings and the concomitant problem of the right to uninterrupted natural light. Ostia is the main source of evidence on the insula and it is argued that the insula developed at Ostia was both later and modelled on the insula of Rome. Certainly what we see in the insula of Ostia is the courtyard and in some respects the courtyard is the key to the development of the insula as it also was the base for the atrium house. The courtyard enabled the development of most sites, however awkward, to be undertaken, the siting of the courtyard determined the layout of the insula and the axuality and symmetry of that layout. Planning of the house to meet the needs of the day can be seen in the progression of the house down the ages but for the elite it also serves to demonstrate the status of the individual. How we determine what factors are at work within the house which exhibit that power is now impossible to assess, we only have the architectural remains to consider. This is not true of Pompeii and Herculaneum, where there is a relative wealth of information in the architectural remains, the artefacts ranging from furniture to domestic utensils and the extant writings from which many clues can be gleaned. The current approaches to analysis of this information are both interesting and innovative but while a picture of sorts can be discerned caution must be exercised as the picture is incomplete.

An equally radical change can be seen in the public building programme over these centuries; it is one designed to convey the power of the State and the common cult in the daily affairs of the citizens but also to show 'a guid conceit o' itsel' both to its neighbours and to the larger world. Pericles claimed, and correctly, that the development of the Acropolis would bestow greatness on Athens and it did and still does, but it does not convey the same impression of power and influence as in the extant remains of monumental building in Rome. In the Rome of the Early Republic the Forum was the focus, the centre, of the State's power, it was where the new form of democracy was exercised and the governance of the city was conducted. There were other more practical examples of the dynamism of the Early Republic in the supply of water to the city, the drainage system necessary to cope with an increasing body of people and the roads and streets essential to the movement of goods and people around and through the city. What we cannot say is that there was any formal planning procedure of which we know, but some degree of planning must have existed if only because the supply of water, a drainage system and roads and streets are all major projects in a city whatever its size. There is a strong link between the State and the local cult, it is the era of the mythologized human god, the gods play their part in the affairs of State and the temples are built to house them. What is not so evident is the link between the house and the temple; it is seen in the early Etruscan housing with its significant similarity to the Etruscan temple and while the link still exists in the basic shape of the temple, the temple is now serving a more political purpose, still a further aspect of the change taking place.

The concept of colonies was practised by the Greeks as early as the 8th century B.C. but it was the Romans who brought a much more pragmatic approach to the setting up of colonies. The first colonies were on the peninsula and their primary purpose was defensive to protect the expanding territorial interests of the Republic, then there were fortresses with the specific task of guarding strategic points either close to the boundary of Roman influence or important passes or roads of use to an invader. Of the colonies I chose to examine Cosa, a Latin colony founded in 273 B.C., which was laid out on a gridiron system and where the Forum was the focal point of the colony. It is an early example of what modern scholars have described as Romanization, a principle which was extended throughout the peninsula and into the provinces of the Empire. It is a use of planning and building practice as a physical reminder of the power of Rome. It can be described as a refinement of the Minoan and Mycenaean systems of regional control. The Roman concept is much more sophisticated and most importantly the power remains with Rome. While

the reasons for Roman annexation of adjoining territory are many it is a controlled form of expansion which achieves two objectives, the consolidation of newly acquired territory and the provision of an initial defensive barrier well away from Rome. This is conjectural on my part but the principle of colonies as established by the Greeks would have been known to the Romans having the visual examples of Greek colonies founded in the south of the peninsula and another factor in the equation would have been the lessons learned from the Gallic sacking of Rome in 390 B.C. To the Romans it would have been a logical decision to apply the concept both as a way of maintaining control and providing a defensive barrier. The control comes from the communities of loyal Romans subjugating the new territorial acquisitions and providing the heart of the defensive perimeter to protect the ultimate seat of power, Rome. While other benefits flow from the policy of founding colonies and fortresses, which I do not consider here, planning, still an essential in evolving societies, is changing to meet the more demanding needs of an expanding and more complex society.

It is planning which creates the Roman castrum and I believe it is an indigenous concept which incorporates the Roman requirement of axiality and symmetry, it has its defensive attributes and its standard layout would have been familiar to the Roman legionnaires thus diminishing if not eliminating confusion and panic when under attack. That some fortresses eventually develop into towns is well attested but the basic design of the Roman castrum is its military use and while we do not know who conceived the design it must be a feasible assumption that he or they were military men who were conversant with military requirements. I have already discussed the orthogonal system and its possible early history but I believe the Roman castrum took that orthogonal system and adapted it to military use.

In scrutinising Vitruvius' *De Architectura* my initial aim was to determine what made an architect in his day and how the architect learned his profession and in some respects I was not disappointed. He does offer reasons for acquiring a knowledge of certain subjects, he provides his opinion on how an architect should conduct himself and he is diligent in giving credit to his named sources who contribute their knowledge to the advancement of humankind. Equally he is quick to criticise those who do not pass on their knowledge. He provides very clear instructions and relevant measurements in the construction of various buildings, particularly the various types of temple and to a lesser extent of the various types of atrium house. However, while I have been critical of his parsimony in some of his comments what is of concern are the architectural

and planning elements which he has ignored such as the gridiron system and the origin of the atrium house.

In my hypothesis of the links and connections between societies and civilizations I have concentrated on what I consider are two of the basic building blocks, the house and planning, but essential to both is the architect, the interpreter of concepts and dreams, who transforms them into physical structures. Athens of the Classical Period and Rome in the Late Republic and early Empire are testimony to the skills and vision of the architect, who remains virtually invisible to us. On reflection perhaps the role of the architect has never been considered as important, that is, important in the public domain, it is the benefactor or the State who have the leading role. In Britain today I venture the opinion that the architect of the Millennium Dome or the Bridge of Light is not known to the vast majority of our citizens even though both structures of presumed stature have been the subject of much adverse publicity. The architect is necessary to the two building blocks which I consider are the foundations which have existed since Neolithic times, which have undergone many changes down the ages but, as I believe I have shown, there are connecting links, there are connections which can be seen. While the evidence I advance can be described as fragile, in places, I believe this is because we do not yet properly understand how knowledge and skills were transmitted from one generation to another, from one civilization to another, especially in the prehistoric times. I do not consider the arguments I have advanced as definitive and I believe there are areas on which I may have touched but which require much more detailed study; it might be that this thesis will stimulate further research.

Notes

Introduction

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