Monumental Structures and Urbanism: Tell Es-Sweyhat in the Early Third Millennium B.C.E.

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MONUMENTAL STRUCTURES AND URBANISM:
TELL ES-SWEYHAT IN THE EARLY THIRD MILLENNIUM B.C.E.

By

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AN UNDERGRADUATE THESIS

In

Anthropology

Submitted to the Department of Anthropology

University of Pennsylvania

Thesis Advisor: Dr. Richard Zettler

2001
ABSTRACT

Archaeological investigations at the northern Mesopotamian site of Tell es-Sweyhat, Syria have revealed two large mud brick structures on the southern and western slopes of the main tell that may date back to the earliest phases of the site’s settlement, c. 2800 BCE. This thesis will focus on data recovered during the 2000 season from the western mud brick structure, dubbed the ‘platform,’ and will attempt a reconstruction both of its form and a calculation of the labor costs involved.

During the mid-third millennium, many sites in the Syrian Jezireh expanded in size, erected extensive city walls and seem to have become ‘regional centers,’ while smaller sites nearby contracted or were abandoned. Since 1989, the University of Chicago’s Oriental Institute and the University of Pennsylvania Museum have conducted excavations at Tell es-Sweyhat with the aim of better understanding urbanism in northern Mesopotamia during the Early Bronze Age (EBA), c. 3000-2000 BCE.

The aim of this thesis is to use data from one such regional center to elucidate the phenomenon. Tell es-Sweyhat grew steadily during the EBA, reaching its apex c. 2150 BCE, in a process that seems to have begun early in the third millennium when settlements around it, such as Tell Hajji Ibrahim, were abandoned. This process is not wholly understood, but may be due to the growing prominence of Tell es-Sweyhat in the local economy, perhaps a result of the same authority that oversaw construction of the mud brick platforms dated to this time. Admittedly, the incomplete data recovered in one season from a limited 2x10 m trench naturally precludes a comprehensive argument for Tell es-Sweyhat’s transition from village to urban center, but it is clear that a complex locally based civic organization accompanied urban growth.
ACKNOWLEDGMENTS

I want to thank the University Scholars Society for providing me with the extensive wherewithal needed to get me off the ground and headed toward Syria. The time spent there at Tell es-Sweyhat has supplied me with wonderful memories. In this regard I am also indebted to everyone with whom I worked: Carol, Fuad, James, Kevin, Lisa, Ted, Uzma, my workmen and women, the villagers of Nefileh, and the Syrian Department of Antiquities. This thesis could not have been possible without the kindness, helpfulness and good cheer that have carried over from last summer's work into the spring of this year.

I am, however, especially indebted to the dig directors, Drs. Richard Zettler and Michael Danti, who have helped me throughout the semester with ideas, theories, methodology and, as James would say, *plain facts*. They have afforded me enormous patience in teaching me the archaeological ropes and showing me how to learn from my own mistakes.
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PART 1: Introduction

“A city... is the pulsating product of the human hand and mind, reflecting man’s history, his struggle for freedom, creativity, genius – and his selfishness and errors.”

Charles Abrams 1988 from The City Is the Frontier

Throughout humankind’s history, the social organism of the city has represented the embodiment of civilization for some, while for others it has been the root and home of all evils. A 1st millennium BCE scribe was moved by his Mesopotamian city to write:

*Babylon is such that one is filled with joy looking at it.*

*He who lives in Babylon, his life will be prolonged.*

*Babylon is like the Dilmun date whose fruit is uniquely sweet.*

(Van De Mieroop 1999: 43)

Then there are of course, the many biblical references to this ancient megalopolis. In one, the prophet Jeremiah proclaims:

*Babylon hath been a golden cup in the Lord’s hand that made all the earth drunken: the nations have drunken of her wine; therefore the nations are mad.*

(KJV Jeremiah 51: 7)

Yet whatever opinion one might hold about the city and city life, it cannot be denied that urbanism is a special kind of phenomenon, drawing upon a level of energy that can only be provided by combining the efforts of the many: the city is a gathering place for human resources, cultural, economic, intellectual, and physical. However, in order to become this hub, human societies have had to traverse social and biological
thresholds limiting the growth of their communities both in terms of their settlement's size and the complexity of their social networks (White 1959; Service 1975; Chirot 1994; Wright 2000).

- Toward Urbanism

The mechanisms by which human societies have overcome these thresholds are varied, but they are embodied in the term 'civilization.' Usage of the term is obviously fraught with its popular (and frequently infamous) connotations, but I want to delimit civilization's meaning, for the purpose of this discussion, to differentiating the modes of social complexity that separate urban societies from pre-urban ones; my intention is not to make a case for the cultural supremacy of the one over the other. By modes, I refer to the ways in which human societies act together as a community. Though the nomenclature varies in the anthropological and sociological literature, these modes are most frequently defined as egalitarian societies (band and tribal), ranked societies (chiefdoms), stratified societies, and states (Fried 1967; Service 1975 in parenthesis). The mode that will mainly be discussed here is that of complex chiefdom, using Earle's refinement of the terminology (Earle 1989), marked by "1) discontinuity in rank between chiefs and commoners; 2) Specialization in leadership roles; and 3) Increased centrality in the regional hierarchy" (Earle 1978 as quoted by H. Wright 1994). It is a transitive mode of societies developing toward the state.

This thesis is predicated on the principle that societies evolve. Societies change over time and this change is generally directed toward greater complexity, as R. Wright vigorously emphasizes in his recent book Non-Zero. R. Wright synthesizes the earlier

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work of White and Service (White 1956; Service 1975) to correlate the principles of biological evolution with that of social evolution, presenting a holistic model of increasing complexity that occurs in both biology and society (R. Wright 2000).

However, R. Wright's observations have their problems, namely his simplification of cultural processes. Broadly speaking, his general theme does hold true in the archaeological record (see PART 6). In the case of Tell es-Sweyhat, the move toward greater complexity is shown in the development of what was probably a village of less than 5 ha at the beginning of the third millennium to a city of 40-45 ha over a course of almost a thousand years. Halfway through this gradual process, the city was significant enough for the rulers of Ebila, a fully developed, literate city-state of perhaps 60 ha, to forge a marriage alliance with it in the mid-third millennium (see below and PART 2).

Although the direction of social evolution seems to favor civilization, it is not to create a process that has 'civilization' — used this time with all its popular connotations — as its apogee, a simplification common to old notions of social Darwinism. Nevertheless, this thesis does not hide its deep respect for social evolution. In order to cross the threshold between small communities and urban society, people banded together in innovative ways that challenged prevailing ways of life. It is that element of challenge, whether the participators were aware of it or not, that elicits admiration. For example, for a people to change from kin based to contract based relationships, they not only had to accept new ways of understanding each other, but also new ways of understanding themselves in order to extend their trust. Fundamental shifts such as these is what colors human cultural history with its triumphs, illustrated by the beauty of art and architecture,
and also its tragedies, best embodied by the evolution of warfare’s ever-increasing means to destroy.

- Urbanization at Tell es-Sweyhat

At Tell es-Sweyhat, the source of the push for greater social complexity is not entirely understood. A process of secondary state formation has been argued for the region in the mid-late fourth millennium BCE using a model proposed by Algaze, which sees the southern Mesopotamian polity of Uruk civilization (c. 4000-2900 BCE (Kuhr 1997)) spreading its power and, by association, its urban way of life in a sphere of influence that ranged from Egypt in the west, to Anatolia in the north, and to the Iran in the east (Algaze 1989; 1993). This may have indirectly sparked Tell es-Sweyhat’s urbanization since late fourth millennium sites nearby, such as Jebel Aruda, are clearly influenced by Uruk in both its architecture and its material culture (Ibid.).

Schwartz notes that there was a period of devolution in the intervening period before the next widely documented period of urbanism (1994). However, in the mid-third millennium BCE, cities in northern Mesopotamia once again flourished, probably due to intensified agricultural production (Wilkinson 1990) and the political patronization of smaller sites by larger polities such as Mari and Ebla (Zettler 1997a). This was followed by a collapse of urbanism that some scholars have suggested was due to climatic changes (Weiss 1983; 1996) or the overuse of limited agricultural resources (Wilkinson 1994).

Urbanism at Tell es-Sweyhat, however, does not wholly fit into these models. The process of urbanism at Tell es-Sweyhat, although probably affected by some or all of the phenomena outlined above, seems to have begun in the early third-millennium as a
largely indigenous process. This process may have seen its beginnings under Uruk influence, but full-scale urbanization at Tell es-Sweyhat appears to have begun in the period that marks the Uruk civilization’s collapse (Danti pers. comm. March 2001). The urbanization that followed occurred under agricultural intensification coupled with intensification of the pastoral economy (Danti 2000), caused the site to reach a prominence that merited the alliance of Ebla (Zettler 1997a). However, Tell es-Sweyhat was at its floris after the collapse of Ebla in the late third millennium BCE at a time when climatic changes should otherwise suggest that it be in its demise (Zettler 1997a). The evidence at Tell es-Sweyhat seems to suggest that the indigenous processes that continued after the collapse of Ebla flourished once the influence of, or limitations set by, Ebla receded in the late third millennium BCE (Ibid.). The collapse of Tell es-Sweyhat occurred probably in the Middle Bronze Age (MBA) IIB, c. 1800-1600 BCE, later than Weiss’ model suggests, perhaps due to the over intensification of its agro pastoral economy – an economy that would then have easily reverted to nomadism (Danti 2000). (See PART 5).

- Strengths and Limitations of The Archaeological Perspective

In the modern world, the mechanisms by which people come to live and work in cities are difficult to pinpoint. To give a few examples, if one were to take a poll of Philadelphians concerned with the city’s retention of its university graduates, some might be general and cite Philadelphia’s brand of urban culture, but most will be quite specific and cite the cost of living, the availability of jobs, crime, or taxes. Yet although these problems are common to many large American cities that have attracted new residents in
recent years, unlike them, Philadelphia has seen negative population growth. The difficulty of analyzing the city is that its complexity embodies the plethora of factors relating to why people move to or away from it. This difficulty is even more apparent when applied to antiquity since the people who lived in those cities are no longer available to take a census of or ask questions to and have left little or no written records.

Although urban life of thousands of years ago is likely not as complex as it is today and although there are instances in antiquity where a king has left records of a city’s founding or an inscription that recounts the destruction of such-and-such a place, there is a prevailing dearth of data. However, archaeological research can thrive despite this lack of detail, because its strength lies in its utilization of the perspective of time. Macro processes can be discerned in the accumulation of data over hundreds of years, if not millennia. The tells of the Near East are therefore ideal locations for understanding urban processes since they are made up by strata upon strata of data representing contiguous spans of human lives (G. E. Wright 1972). The frequently large size of tells also indicates that the size and, by approximate derivation, the population of the settlement approaches the dimensions assumed to be typical for a city.

Making use of this perspective depends obviously on the quality and quantity of data, both of which are often unfortunately limited by the logistics of archaeology: cost, research goals, the scope of its inter-disciplinary approach, duration of excavations, and the skill of the archaeologist. Another limitation of this chronological viewpoint is that since the observer sits at a distance from his subject, he will likely miss many of the intricacies, some of which may be critical, that abound in human relations leading to greater social complexity. As Lamberg-Karlovsky and Sabloff note, the problem for
archaeologists is that they are "often unable to control, quantify, or even identify a majority of the variables in an extinct cultural system" (Karovsky and Sabloff 1995).

Although archaeological investigations have proceeded apace in the past 30 years in Syria, compared to the data sets of southern Mesopotamia, the period of the third millennium BCE in northern Mesopotamia, the subject of this thesis, is by comparison poorly understood (Weiss 1986: 1). Furthermore, the deep and unexcavated levels at which EBA occupation often occurs in the archaeological record obscures analyses (Wilkinson 1994: 487).

- Research Goals

Theories concerning the development of civilization (R.M. Adams 1966; R.N. Adams 1988; Chirot 1994; Service 1975; White 1959; Wright 2000; et al.) presents some useful paradigms through which to consider incipient state formation vis-à-vis the management of labor. In examining the labor energetics of one of Tell es-Sweyhat's mud brick platforms, this thesis will approach the question of state formation empirically. Using the archaeological perspective, a broad time frame will supplement an understanding of the process.

The hypothesis is that urbanization at Tell es-Sweyhat was a mainly indigenous development beginning in the early third to late fourth millennium BCE. Based on the archaeological data, the settlement displays the high level of social complexity characteristic of complex chiefdoms in its management of labor forces, representing a good portion of its population, in non-subsistence projects. It suggests that centralized
administration in the early third millennium was the lynchpin of the settlement’s steady growth into an archaic-state by the mid-third millennium.

PART 2: Tell es-Sweyhat and its Environment

Situated 3 km east of the Euphrates River and 65 km down river from the Turkish border in modern day Syria, Tell es-Sweyhat is a ruin mound such as is typically found in the Near East. Over the course of several millennia, successive occupations have left an accumulation of debris, forming a prominence that rises above its surroundings. The layers of archaeological strata within these mounds, although far from being simple to distinguish and excavate, allows one to view the site’s development diachronically across hundreds of years.

Excavations began at Tell es-Sweyhat in 1973 under the auspices of Oxford University’s Ashmolean Museum in response to the threat of flooding connected with the construction of the Tabqa Dam at nearby Lake Assad. However, the river did not reach its predicted height and Tell es-Sweyhat was not inundated. Since 1989, excavations have been conducted every two to three years under the auspices of the Oriental Institute and the University of Pennsylvania Museum with the last season being conducted in 2000 by the Penn Museum.

At Tell es-Sweyhat, the archaeological picture recovered so far indicates that occupation at the site began in the early third millennium – a time frame that will likely be pushed back to the late fourth millennium once further investigations expose the deepest areas of the tell; occupation from that period has been recovered at the nearby site of Tell Hajji Ibrahim, situated less that 1 km from Tell es-Sweyhat (Danti 2000). Tell
es-Sweyhat was at its floruit c. 2150 BCE (radiocarbon dated, Armstrong and Zettler 1997) after which was a period of decline that led to the site’s abandonment sometime after 1800 BCE in the MBIIB (Zettler 1997a). Over a thousand years later, Tell es-Sweyhat saw phases of limited occupation during the Hellenistic and Roman periods in the 3rd century BCE (Ibid.).

The 2000 excavation season’s principle goals consisted of: 1) expansion of excavation areas dug between 1989 and 1998 on the western slope of the tell; 2) the opening up of new excavation along the southern slope of the tell; and 3) the assembling of a stratigraphic sequence that would tie in this new data with the stratigraphic record recovered from previous seasons.

- The Morphology of the Tell

Altogether, Tell es-Sweyhat is c. 45 ha in size and it is composed of three distinct morphological zones that likely represent the growth of the city: a main mound of c. 6 ha in size, the highest point of which stands c. 15 m above the surrounding plain; a lower mound of c. 30 aectares; and an area of indeterminate area to the south of c. 10 ha (Holland 1976: 36; Zettler 1997a) (Fig. 2.1). Two sets of fortifications have been discerned at the site: one surrounding the main mound and another larger fortification that encompasses the lower mound (Holland 1977: 37; Zettler 1997a: 4–6).

The early third millennium occupation at the site was probably restricted to an area of less that 5 ha on the main mound (Danti 2000: 4) and further excavations are needed to fully describe the settlement at this period since those early levels not been widely excavated (Ibid. 4; Armstrong and Zettler 1997). The lower mound and the
indeterminate area south of it likely represent the growth of the city around the main mound in the late third millennium (Danti 2000: 5). At this time, occupation on the main mound appears to have been stratified into upper and lower levels by means of terracing (Ibid. 5; Zettler 1996, Armstrong and Zettler 1997), while the lower area contained buildings for grain storage, residential structures and a large kitchen building with some speculation that some of these remains were once administrative structures (Danti 2000: 5; Holland 1976, 1977; Zettler 1996, 1997). Large houses, specialized production areas and water management facilities were found in the outer town (Danti 2000: 5). During the denouement of the site c. 1800-1600 BCE, the lower mound appears to have been abandoned and only the main mound occupied (Ibid. 5).

According to the framework of ancient northern Mesopotamian cities described by Oppenheim, Tell es-Sweyhat is typical in its layout with a citadel and its fortifications, represented by the main mound, surrounded by a residential area and a larger city wall (Zettler 1997a: 7; Oppenheim 1964: 130-133).

- The Environment

Tell es-Sweyhat is located on the left bank of the Euphrates in a region known as the Jezireh. The Jezireh is the plain that extends between the Tigris and Euphrates rivers from northern Iraq through Syria into Turkey (Wilkinson 1994: 484). It is a generally flat steppe that quickly shifts to desert (Danti 2000: 21). Tell es-Sweyhat lies in a crescent-shaped embayment of c. 4800 ha of arable land (Danti 2000: 3) formed by the Pleistocene course of the Euphrates River through the plateau (Ibid. 3; Wilkinson 1994). Sediments have washed down from the plateau over the course of millennia and obscured much of
the embayment (Wilkinson 1976: 67). The area sits on the southern most edge of the Fertile Crescent and the environment of the area is arid, but arable, with annual rainfall of 200-300 mm during the winter (Zettler 1997a: 2). The Balikh River in the east bounds the part of the Jezireh in which Tell es-Sweyhat is located.

The seasons at Tell es-Sweyhat are markedly different: summer temperatures average 30° C and winter temperatures average 7° C (Danti 2000: 21). The barren Jezireh blooms in spring, only to have its greenery disappear under the summer sun (Wilkinson and Tucker 1995: 9-10). Rain falls during the winter season in October or November and during the late spring in April (Ibid. 21). The days are hot, while the nights are relatively cool.

Water sources must largely have been derived from wells and water systems designed to collect and store rainwater, which have not been identified (Ibid. 26). The relative proximity of the river must have allowed for the inhabitants to collect some of their water there as they do today in the nearby village of Nefilah.

Although the range of rainfall is enough to allow non-irrigated, ‘dry’ agriculture (Wilkinson and Tucker 1995: 7), the inconsistency of annual precipitation (25 to 35% mean inter-annual variability of rain) (Danti 2000: 3) precludes a settlement that could have depended wholly on agriculture. The agricultural produce would primarily have been wheat and barley (Wilkinson 1976: 67), but little non-irrigated wheat has been found at Tell es-Sweyhat (Miller 1997). It would have been difficult to implement irrigation canals even in the flood plain as it is at a higher level than the Euphrates (Danti 2000: 4), a situation that is entirely different in southern Mesopotamia where such canals
could easily have been formed by cutting a channel in the banks of the river that rise above the plain in that region (Lloyd 1984: 16).

Wilkinson’s reconstruction of the ancient agricultural potential of the Jezireh surmises that sites in northern Mesopotamia could not have exceeded 100 ha unlike the southern Mesopotamian cities that sometimes grew to over 400 ha in size (Wilkinson 1994: 483), a conclusion that has been supported by archaeological data (Ibid; Weiss 1983). Although Wilkinson does note that the population estimates based on the size of a site are problematic, he estimates that 100 ha could accommodate between 10,000 and 20,000 people using a general model of 100-200 persons per ha (Wilkinson 1994: 483). From these figures, he derives a model of agricultural economy that calculates that as sites grew larger, they would have depended increasingly more on tributary or satellite communities in order to be provided with sufficient foodstuffs (Ibid. 483, 503).

At Tell es-Sweyhat, Wilkinson calculates there was a 3-4 km radius of intense agricultural use around the site during the late third millennium, which coincides with the site’s maximum extent, based on the distribution of pottery sherds found on the surface, that would have been upturned in ancient cultivation (Ibid. 492). The limited amount of cultivable area in the vicinity of Tell es-Sweyhat, Wilkinson notes, would have limited the growth of Tell es-Sweyhat unless it utilized supplementary means, such as requisitioning foodstuffs from the surrounding hinterland or importing it from the fertile regions in the south (Ibid. 501-504). Furthermore, Syrian government records show that the area of Tell es-Sweyhat suffers from drought 1 in 5 years (Wilkinson 1994: 499; Danti 2000). It has therefore been speculated that the settlement, which shows no sign of ancient irrigation works, must have depended also on pastoralism, as the ethnographic
examples of present-day locals living in the area would suggest (Zettler 1997a: 2; Danti 2000: 3).

In short, the environment of the Jezireh in which Tell es-Sweyhat is located is marginal and several consecutive years of bad harvests could have precipitated a collapse of urban society (Weiss et al. 1993; Wilkinson 1994).

Danti’s recent research shows that pastoral economies working in sync with agricultural efforts could sustain a more robust economy than what Wilkinson’s model indicates (Danti 2000: 298–300). The area can be thought of as a transitional zone in which nomadism co-existed with agriculture between the more fertile southern zone and the desert (Lewis 1987: 1; Danti 2000: 2-3). Central to this ability to take advantage of pastoral resources was economic centralization that pooled local resources together in order to supplement shortcomings in any given season (Danti 2000: 304-5). However, although this economy could sustain a community through short periods of difficulty, perhaps one or two years, under consecutive years of drought, over-grazing would have eventually led to a pastoral economy’s collapse (Ibid. 305).

- The Historical Context of Tell es-Sweyhat in the Third Millennium BCE

Mid-third millennium BCE texts recovered from the site of Tell Mardikh, located c. 150 km to the southwest of Tell es-Sweyhat and identified as Ebla (Matthiae 1981), show that Northern Mesopotamia was organized into a number of extensive city-states (Zettler 1997a). Within this political context, Tell es-Sweyhat has been tentatively identified as Burman in the Ebla archives (see Zettler 1997c: 169 and Danti 2000; 79 for references). The kingdom at Ebla made an alliance through marriage by a daughter to one
of Burman’s princes (Ibid.) It seems that Ebla traded with the Tell es-Sweyhat region especially for its pastoral products (Danti 2000: 78-80). The area of Tell es-Sweyhat was noted for its pastoralists and pastoral economies are often associated with nomadism, historically known for being difficult to control. Ebla was a major urban center comparable with southern Mesopotamian cities such as Uruk (Mattia 1981). It seems, however, that Ebla’s power diminished in the marginal region of the Jezireh to its northeast, forcing it to form alliances with settlements such as Tell es-Sweyhat in order to provide a buffer zone against sporadic intrusions from this region into their heartland: a policy typical for peripheries (Danti pers. comm. March 2001).
PART 3: Operation 12 and the Mudbrick Platform

The mud brick platform that is the subject of this thesis was uncovered during the Tell es-Sweyhat Regional Project’s 2000 season in an area designated as Operation 12 (Op.12). Excavations in Op.12 began in 1993 as part of the Project’s operational goal of cross-sectioning the main mound. Op.12 runs contiguous with four other operations that form the present trench running up the western slope of the tell (Figs. 2.1 and 3.1): Operation 1 (Op.1) located at the foot of the western slope and the first square opened up by the Penn Museum upon the resumption of excavations in 1989; Operation 20 (Op.20), a 6x10 m area sandwiched between Op.1 and Op.12 opened up in 1995; Operation 29 (Op.29), the c. 10x10 m area that lies between Op.12 and Op. 21 opened up in 2000; and Operation 21 (Op.21), an area c. 10 m east of Op. 12 also opened up in 1995 (Armstrong and Zettler 1997: 11). Virgin soil has so far been reached only in Op.1 at a depth of 14.56 m (el. 85.44) below the cement benchmark established at the top of the mound (Ibid. 12). The strata were divided into six Phases: Phase 1, the earliest phase, represents the early third millennium BCE; Phases 2-3 date to the mid-late third millennium BCE; Phase 4, representing the height of Tell es-Sweyhat’s growth, dates to 2850 BCE; Phases 5-6 date to the first half of the second millennium (Ibid. 30).


Work in 1993 began in Op.12 in a 10x10 m area, but excavators quickly uncovered a large construction on the east side of the square that led them to extend the

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operations 6 m east in order to follow its dimensions (Ibid. 11). Although only the western face of the structure was uncovered, the structure was identified as being curved, composed of mud brick with stone foundations, and having an estimated diameter of more than 12 m. The mud bricks were discerned to extend more than 5 m from the structure’s exposed western face atop substantial foundations that were composed of seven to eight course of stones and boulders in the northern end and petering out to only three courses of smaller stones towards the portion exposed in the south of the operations. The excavators have been led to believe that the structure was built on a slope, since the absolute elevation obtained of the stone foundations indicate that the northern portion is lower than the southern portion, and that it’s function was to create more flat space on the tell (Ibid 18). Excavators determined that since the structure was covered up by fill associated with the construction of a terrace during Tell es-Sweyhat occupational Phase 4, a period encompassing the last quarter of the third millennium BCE, the structure must therefore predate this phase. A more precise chronological attribution could not be given due to the tentative nature of the Phase 3 data (Ibid. 19). The structure also needed to be dismantled before the underlying sequence could be properly determined.

To understand the nature of the mud brick structure and facilitate the stratigraphic sequencing of the tell, we cut a 2x10 m trench running East-West (Figs. 2.1 and 3.7) through it in 2000. The excavation began at the southeastern corner of Op.12 and ran along the southern edge of the operation, located at what was assumed to also be the approximate southeastern corner of the structure excavated in previous seasons. The aim was to take away the mud brick layer by layer and find the platform’s construction floor.
Excavations, however, quickly revealed the great size and complexity of the construction, which would frustrate meeting our goals.

In the process of excavations, mud brick and plaster lines became quite visible in the sections. As articulation of these bricks proceeded apace, it became apparent that several varieties of brick and construction techniques were used in the construction. Some bricks were of uniform composition and appeared to have been laid straight in orderly fashion, while others were slumped and cast amidst an odd assemblage of brick varying in size and composition (Fig. 3.8). Horizontal exposures clearly showed that the bricks were laid diagonal to the edges of the trench, indicating that we were cutting obliquely across the original structure and that the bricks were laid to roughly match the curve of a pre-existing mound (Fig. 3.9 and 3.15). The bricks in the eastern end of the trench appeared to be of roughly uniform size with dimensions of 65x35x10 cm, with some smaller bricks being 40x30x10 cm. The smaller bricks appear to be half of the larger bricks; perhaps they were broken or brick sizes were being systematized. The differing size of the bricks in section was somewhat explained by their arbitrary disposition created by our trench, but many bricks were nevertheless clearly fragments.

Articulation of the bricks also revealed several clusters of differentiated brick. There were concentrations of good brick in certain areas made of red and brown clay, lime bricks in others; and in one section, a hodgepodge of ash bricks and bricks made of organic matter. Cracks and cutlines articulated showed that the structure had been cut with pits and that the construction of the platform had proceeded in phases.

The most startling discovery was that the plaster lines that became apparent in both the north and south sections gradually began to demarcate a half-arch of bricks.
(Figs. 3.10 and 3.11). This ‘arch’ became more pronounced as our trench grew deeper. From the eastern end of the trench floor, this half-arch began c. 2 m the south section and c. 3 m in the north section at a depth of c. 2 m (find). This half-arch was composed exclusively of mud brick with lime inclusions. Red plaster covered both the front and rear of the half-arch (Figs. 3.12, 3.18 and 3.19). The articulation of this shape in section led us to scrutinize more closely the plaster lines on the surface of our trench. We found that a plaster line could be traced from the N arch to the S sections in a gentle curve (Fig. 3.16).

It became apparent that we were digging another round structure within the larger structure that we had set out to dismantle. The cracks and cutlines in the section therefore did not merely represent phases of the larger structure’s construction, but represented successive modifications to a core mud brick structure that culminated in the larger one of c. 12 m originally uncovered in 1993. We dubbed all these constructions as parts of a larger mud brick ‘platform,’ since we first assumed that the structure’s function was to increase occupational space on the slope of the tell. Discerning these separate phases would prove to be a difficult task since we were working within the limited exposure of a 2 m wide by 10 m long trench. Although some attempt was made to expand our excavations norhwards, a careful horizontal exposure proved too time consuming for the duration of our excavations and we therefore decided to use this season to continue to focus on the area of the 2x10 m trench in order to find the platform’s bottom. Limited excavations were carried out west of the 2x10 m, however, in order to better determine the relationship between the inner platforms and larger one exposed in previous seasons.

• The Mud Brick Platform
Our attention therefore returned to understanding what had been revealed of the platform in our sections (Figs 3.17, 3.18 and 3.19). The account that follows describes the platform constructions as they radiate westward from the pre-existing ‘core’ platform defined by its plaster facing in section.

Once we had reached a depth of c. 2.5 m, we decided to leave what remained of the core platform standing and to dig in front, i.e. west, of it in order to articulate the platform’s face. This core platform was easy to articulate since the red plaster that covered it was distinctive and removal of the brick that was later placed against it was relatively easy. However, we suspect that this core platform was built piecemeal as the east section reveals two separate groups of brick (Figs. 3.13 and 3.17). Furthermore, a horizontal plaster line runs along the surface of the core platform that extends from the face of the core to the crack demarcating these two groups of bricks visible in the east section (Fig. 3.16). We need to expand our operations north and south of our trench to understand the relationship of these two groups of brick to the core platform.

Excavations in the Op. 29, which abuts Op. 12 to the east, uncovered the eastern edge of the platform where the platform was discerned to have a precipitous edge that showed a pit had been cut into the platform and that occupation layers had accumulated against the platform (Figs 3.18 and 3.19). Whether this represents a later cut or usage contemporary with the early life of the platform is not clear. I suspect that this is the original back, i.e. east side, of the platform since the edge appears to be too deep to be a deliberate cut. However, the relationship of floors and fill layers in Op. 29 to the platform is not absolutely clear. The reconstructions that appear in the following chapter look at
both an idealized circular platform and a truncated one, which is what appears to have been the more likely.

Against this core platform, a ‘butress’ was either contemporaneously or shortly later added (Figs. 3.14 and 3.18). It extends about 2 m in front of the core platform before it enters the south section in our excavations. We are not entirely sure if this construction functioned as a buttress, due to the limited exposure; it may in fact be part of wall that adjoins the core platform. It does form at least one, if not two, corners with the platform, indicating that it was part of the core platform’s original construction (Fig. 3.16)

In the next phase of construction, a ‘skirt’ that is demarcated by a white plaster line on its upper surface was built against the core platform (Figs. 3.12, 3.18 and 3.19). The skirt would have been c. 2 m below the top of the platform (assuming that what we have excavated shows the approximate original height of the platform). Assuming that we are nearing the bottom of the platform, which our excavations near the façade portion of the platform suggest (see below), the skirt would have stood c. 1 m from the ground. The skirt extended c. 3 m out from the core platform and would have encompassed the lower portion of the buttress, leaving its upper part exposed.

However, it appears that a subsequent modification to the platform cut into this skirt, in the form of an unidentified construction that we termed the ‘finger’. This modification is visible in the north section as an intrusion of bricks with gray mortar lines (Fig. 3.19), but is not visible in the south section. Right next to the white skirt, we had left a ‘finger’ of bricks with minor stone foundations standing, which we thought might represent an additional phase of the platform, but removed them because they could not be defined southward. We did, however, find additional bricks of this type lying atop
good stone foundations approximately 50 cm in front of this finger (Fig. 3.2) that were cut into by the final phase of the platform (see below). Since we excavated the platform obliquely, these bricks set on stone are probably the corner of an unidentified construction built next to the skirt, possibly a wall of a building, which extends northward into section. It may have been contemporaenous with the white skirt, though it would have looked odd, since it stands higher than the skirt. However, this phase of construction is the most difficult to understand due to our limited exposure. We can roughly assume that it extended c. 3 m in front of the white skirt.

A jumble of brick was later maladroitly stacked against the core platform atop both the skirt and the finger. We believe that this phase was planned to precede construction of the final phase of the platform (see below). It was a massive effort visible in both the north and south sections (Figs 3.18 and 3.19). Composed of a variety of materials, organic, ash, clay and mud, the haphazard way in which this phase was stacked seems to indicate that it serves as a filler to the larger ring of platform that had been first uncovered in 1993 (Fig. 3.4).

The final phase is largely composed of layers of white brick and red plaster that extends 4 m in front of the white skirt. The outer face of this phase is composed of the stones discerned in earlier excavations (Fig. 3.3). These stones may have been foundations or a façade to the platform. This final phase of the platform was built atop mud brick fill, which in turn lies on a sloping surface of green-gray ashy surface (Figs. 3.5 and 3.18). Just in front of this final phase of the platform, we uncovered the corner of the stone foundations of two walls that also lie atop the green-gray surface (Fig. 3.6). The function of this partially excavated structure is not clear, but the obtuse angle of the
corner suggests that it encompassed a large space. Perhaps it formed part of a bastion or
was the corner of a courtyard wall.

The entire platform then seems to have been largely buried in a massive terracing
construction. A retaining wall in Op.20 c. 4 m west of this façade (Armstrong and Zettler
1997: 14-15) suggests that it retained a massive infilling that leveled the tell and covered
most of the platform during or just prior to Tell es-Sweyhat occupational phase 4 (Ibid.
19-20), i.e. the late third millennium BCE. In the late third millennium BCE, the west
side of the tell was cut down at a point c. 4m west of the platform façade. This formed a
large open space, demarcated on its west by a stone retaining wall, and was filled with
rubble and bricky fill to level off the tell (Ibid.).

The greatest shortcoming of our present data is the lack of knowledge of what
levels the platform sits on. This problem, of course, is easy to rectify with further
excavations. The same solution applies to our next shortcoming, which is our limited
exposure. We plan to rectify both problems during our next field season in fall 2001.
Nevertheless, despite this lack of data, a reasonably clear idea can be formed about the
possible size and shape of the platform. We have also collected some ash from the core
area of platform and the area in front of the stone façade and we are arranging to have
them submitted for Carbon-14 dating, which should allow us to establish construction
dates for the platform(s).
PART 4: Construction of the Mud brick Platform and Labor Energetics

The previous section detailed the excavation of the mud brick platform and its construction phases as discerned in the field. In this section, I will attempt to reconstruct the platform and its phases using the field data. I present two reconstructions: one based on the notion that the platform was a circular structure that was cut into by later occupation and another, more strongly supported by the present archaeological evidence, that assume that the platform’s eastern side was originally truncated or vertical. The reconstructions will follow the platform’s construction as it radiates westward from its core construction. I have given the platform 6 phases of construction: Phase 1 is the construction of the red-plastered core (Fig. 4.1); Phase 2 is the construction of the white-plastered skirt; Phase 3 is an unidentified construction discerned only in the north section; Phases 4 and 5 appear to be construction phases that prepared the platform for Phase 6; Phase 6 is the Final Phase of the platform with the stone facade and white bricks with red mortar (Fig. 3.7).

Given these reconstructions, I will give an approximation of the platform’s size (Tables 4.1 and 4.2) and its construction costs. From these estimates, a calculation of labor costs will be made. A discussion of labor energetics will then follow.

- Reconstructing the Mud brick Platform as a Circular Structure

As recounted previously, once the significance of the core platform in our sections became apparent, our excavations attempted to preserve its face. Based on the
curvature of the face, we have a rough estimate of the Phase 1 platform’s diameter: c. 11 m. This figure is based on the currently excavated level of the platform and, as logic would suggest, the lower we dig, the radial extent of the platform should become greater. However, we have good reason to believe that we are approaching the bottom of the platform — given its relationship to the outer façade whose bottom we believe we have found — and therefore the estimate is wholly reasonable. The volume of the core platform would have been c. 429 m³, assuming that it would have formed a hemisphere. The dimensions of the buttress have not been given since our excavations are too limited to determine its shape. The buttress in the reconstruction (Fig. 4.2) is an aesthetic approximation. We do not know if there were additional buttresses or if in fact our buttress is part of a wall or if it forms part of another curving platform attached to the core platform that we’ve exposed.

The addition of the white plastered skirt in Phase 2 would have extended the radius of our platform by c. 3m, bringing the diameter to c. 17 m. The skirt would have stood about a meter high and its area would have been c. 199 m³, giving a combined volume of the platform at this stage of c. 628 m³ (Fig. 4.3).

The intervening phases of the platform’s construction cannot be accurately calculated given the fragmentary understanding of the phases intervening 2 and 6. The volume of these phases is considerable, as almost the entire area north of our trench has been determined to be mud brick.

The final phase of the platform, Phase 6, would have extended the platform’s radius by a further 4 m, giving a final diameter of the platform at 25 m. This figure more than doubles the size that we presumed at the beginning of the 2000 season, which takes
into account only that area encompassed by the stone façade/foundations (Figs. 3.3 and 3.7). We now know that the mud brick just to the south of where these stones peter off is also related to the platform’s Final Phase. It would have created an irregularly rounded shape, for although the stone façade is arranged in a circular fashion, the white bricks and red plaster construction attached to it to the south clearly suggest that the shape of Phase 6 was not uniformly circular. In gauging the construction costs, I have used Phase 5 (hereon referred to as Phase 5/6 in regard to the Final Phase), which appears to form a more regular circular shape. The final phase therefore appears to have encompassed an additional 2557 m$^3$ of construction (Fig. 4.4).

- Reconstructing the Platform as a Truncated Structure

The following is a reconstruction of the platform using stratigraphic data that shows the platform’s eastern edge was a steep face c. 4 m east from the half-arch in the south section. In this case, the platform seems to have been a kind of salient in a fortification structure. In effect, the truncated structure would be 4/11 (36%) of the size (in volume) of a fully hemi-spherical platform.

Given these reduced dimension, the core platform (Phase 1; Fig. 4.6) would have encompassed a volume of c. 156 m$^3$ (Fig. 4.6), the skirt (Phase 2) would have been c. 72 m$^3$ (Fig. 4.7). At the time of phase 2, the platform would therefore have been c. 228 m$^3$. The addition of the Final Phase (Fig. 4.8) of the platform would have added c. 1158 m$^3$.

- Building the Platform
The process of making mud brick is simple. It is a building material that is still widely used today because all it requires is earth, water and a temper (usually straw). These are mixed together into a kind of thick paste, which is then formed into the shape of bricks using a mold and sun dried for about two weeks (Oates 1990: 388; Moorey 1994: 305). Brick making is back breaking work, however, as the brick maker sits on his haunches while continuously lifting and moving wet earth. In Egypt, spells were buried with the dead asking that they be spared from this work (Eyre 1987: 189)

The material problem with making mud bricks is not earth, but the other two ingredients. Water is scarce in Mesopotamia and for large construction projects, a great deal of straw would have been needed, about 60 kg for every 100 bricks, about 1/8 ha of barley (Oates 1990: 390). Straw has various other uses than as temper; it could have been used for fuel or food for animals. How much straw went into the bricks in the Tell es-Sweyhat platform is unclear, however. Although most bricks appear to contain straw, some contain very little or none at all. And in the past, if water was not sufficient, water would have to have been transported from the river or the bricks made there and transported (Ibid. 389). At Tell es-Sweyhat, this would have been a distance of over 3 km. Modern ethnographic examples at Tell es-Sweyhat show that pits were dug during the spring to collect the last rains, creating a mud pool, to which the temper was added to the mixture, and the bricks made next to the pits (Danti pers. comm. March 2001).

The bricks in Op.12 appear to have been laid in a stepped fashion to match a roughly circular circumference with the short side of the bricks serving as the face. After a pyramid-like structure was erected, creating the outline of a hemispheric shape, a plaster composed of reddish clay (in the case of the core platform and white plaster, made
of lime, in the case of the skirt (Phase2)) was applied to the face and a smooth curved surface was achieved. The plaster would have been applied in order to preserve the structure from rain, but it would also have served an aesthetic function. It is also expensive as it needs a great deal of straw to make.

The bricks used to build the core platform were c. 65x35x10 cm (.02275 m$^3$) or c. 40x30x10 cm (.012 m$^3$). Again, for heuristic purposes, I will use the larger brick to calculate how many bricks it took to build the platform. The reasoning behind this is that the smaller bricks appeared to be almost exactly half the size of the larger bricks in our excavations and therefore they might represent bricks deliberately cut in half in order to fill in smaller areas. This is a large size brick compared to the mud brick preferred by villagers to build their own homes today. Nowadays, villagers prefer to use a smaller size (Horne 1994: 133), but the larger size brick has parallels in ancient southern Mesopotamia during the Akkadian period (Robson 1999: 59; Wulf 1966: 110; Moorey 1994: 306-7).

Given the dimensions outlined above, for the circular platform the following number of bricks would have been required: for Phase 1, c. 18,857 bricks; for Phase 2, c. 8,747 bricks; and for the final Phase, c. 112,396 bricks. The truncated platform would have required: for Phase 1, c. 6857 bricks; Phase 2, c. 3,165 bricks; and for the Final Phase c. 40,879 bricks. (Table 4.3)

- Calculating the Cost in Labor

It has been observed by Wulf that an Iranian brick maker can produce 250 bricks of 20x20x4 cm in one hour using a mould while working next to a ready brick pit (Wulf'
1966: 110). This brick is much smaller than the ones used to build our platform, being 1/14 the size, and such exertions could not be sustained for long (Horne 1994: 134). Second millennium BCE educational exercises from southern Mesopotamia give standard brick sizes and labor estimates (Robson 1999: 58, 76), for a brick of 50x50x8 cm (approximate size of the Op.12 bricks) we can calculate that c. 75 bricks could be made per day by one man, including processing the materials of mud, water and straw. The fact that we are dealing with scribal exercises might compromise the reliability of the figures, but scribes worked from some reality. Nevertheless, an idea of what was considered a reasonable amount of labor by ancient Mesopotamians can be gained by looking at such sources. The numbers also seem reasonable when compared to ethnographic examples. If we assume that the Iranian brick builder could build 250 20x20x4 cm bricks an hour (Wulff 1966: 110), we can calculate that he could probably build 18 50x50x8 cm bricks an hour. This number is a high estimate since another ethnographer also working in Iran observes that it would be nearly impossible to maintain such a high pace (over 4 bricks a minute) for a whole working day (Horne 1994: 134). But given these simplifications, if this Iranian brick builder worked 5 hours a day (no mean feat since brick building is back breaking work), he could make 90 bricks a day – a number that does not deviate substantially from the ancient textual estimate after taking into account he has all his materials ready before him.

Ethnographic examples show that for houses, two brick makers usually worked together to make the mud brick: one to make the bricks while the other brought the mud to him, however, four man teams are more ideal (Horne 134). For a large project, we can assume that more laborers were used. Brick making was something of a specialized task
(Ibid. 134), however, and it cannot be necessarily assumed that every able-bodied person would be making brick. We shall therefore use the figure of 75 bricks per day per 2-4 person team.

Although population estimates are problematic for many reasons, most notably the difficulty of assessing population density, using an estimate of 100-200 people per ha (Wilkinson 1994) gives us a figure of c. 500-1000 people at Tell es-Sweyhat in the early third Millennium BCE site of c. 5 ha (M. Danti pers. comm. March 2001). Of that figure, it can be assumed that more than 3/4 of the population could work, including children and women. Construction would have taken place after the crops had been harvested in the spring (Ibid.) and therefore the majority of the town’s population would have been free from subsistence labor, in which more than half of the 500-1000 inhabitants would have had to have been otherwise engaged. We can therefore assume that between 375 and 750 people would have been ideally available for non-subsistence labor. However, the actual number would probably have been smaller, given any other number of tasks that the urban settlement would need done. We will further more assume that there is a 60-day span in which the labor was conducted, which represents the labor down time after the spring harvesting.

In a month (30-day) span of non-subsistence labor, given that it takes 2-4 men to make 75 bricks per day, it would take the following numbers of workers for the circular platform: more than 8 teams or from 16-32 people for the core platform (Phase 1); more than 4 teams or 8-16 people for Phase 2; and more than 50 teams or 100-400 people for the Final Phase. For the truncated platform, the following numbers of workers are
required: more than 3 teams or 6-12 people for Phase 1; more than 1 team or 2-4 people for Phase 2; and more than 18 teams or 36-72 people for the Final Phase. (Table 4.4)

Again by using Robson calculations of labor in ancient Mesopotamia, we find that one man can stack 1.25 m³ of bricks per day (Robson 1999: 91) or 55 65x35x10 cm bricks. This calculation uses a much smaller type of brick, but assuming that the volume represents an equal amount of energy (which is a somewhat of a gross simplification), we can apply this labor calculation to the Op. 12 platform’s larger bricks.

We find that it would take one person 343 days to stack the bricks in the circular platform. From this figure, we have the following numbers of workers needed to stack the bricks in the circular platform in 30 days: more than 11 people for Phase 1; more than 5 people for Phase 2; and more than 68 people for the Final Phase. In the case of the truncated platform, we have these numbers: more than 4 people for Phase 1; about 2 people for Phase 2; and about 31 people for the Final Phase. (Table 4.5)

- The Significance of the Data

In order to build the Final Phase of a circular platform, between 100-400 people, almost half the able-bodied working population of Tell es-Sweyhat, were engaged in fabricating the necessary materials. Over 68 people were required to put the bricks together afterward. Of course, all or most of the 68 people could also have built bricks, assuming no specialization of labor, and that brick building and platform construction could have been partially concurrent. Construction could also have proceeded piecemeal, with half the core being built one year and the other half the next. Nevertheless, the size suggested by the figures alone is impressive. The figures are even more impressive when
we consider that another round platform has been discerned on the southern slope of the main mound whose dimensions, perhaps 30 m in diameter, appear to exceed that found in Op.12, although the stratigraphic, and hence the temporal, relationship has yet to be established. This platform appears to be circular, however, its construction phases have not yet been delineated in excavation.

Although the figures for a truncated platform are less impressive than for a circular platform, they still indicate a substantial investment of labor in construction for a settlement that had a population of between 500-1000 people, meaning a labor investiture of perhaps up to 14 percent of the population. One must further keep in mind that the Op.12 platform will expand in the height as we continue our excavations, increasing our volumetric calculations for its construction.

As Abrams notes in his study of the architecture at Copan, “Power over people, within the broad structure of society, is ultimately generated through direct or indirect control over essential factors of production, such as land, labor, water, and, in the modern world, capital” (Abrams 1994: 77). Abrams’ ideas build on theories laid down by such figures as Carneiro (1970), Childe (1950), Service (1975), and White (1949) that consider architecture to be one indicator of the appropriation of labor by an organizing force, i.e. the government. Abrams notes that in periods of great stress on the social system, such as when a governing authority is consolidating its power over an incipient state, there is often an increase in construction of public architecture (Abrams 1994: 92).

The data that we have recovered shows that Tell es-Sweyhat employed a form of labor management indicative of centralized authority. Furthermore, given the precariousness of Tell es-Sweyhat’s environment (Wilkinson 1994; Zettler 1997a; Danti
2000), sustenance for the platform’s labor force must have required either a redistributive apparatus via the centralized authority or frugal management of resources by individual households. How the labor was organized, through forced conscription or volunteers, cannot be determined. Since we do not yet know what the function of the platform was, whether it was part of a fortification system, a terracing construction, or the base of a larger structure that has been eroded, no ideological motivation for the platform’s construction can be suggested. Therefore, the question of whether or not the mud brick platform itself was being used as a conscious or unconscious means of consolidating a centralized authority’s power cannot be answered. Gaining knowledge of the platform’s function and a firmer chronological attribution, through further excavation, should clarify the context in which the platform was built.

• Northern Mesopotamian Parallels for the Mud Brick Platform

Several parallels exist for large round structures in northern Mesopotamia dating to the third millennium BCE:

At Tell Banat on the Euphrates, a large construction, dubbed the ‘White Monument,’ was excavated, revealing a monumental burial mound of c. 100 m diameter consisting of layers of gravel and dirt covered by a white *terra pise* coating and at the center of which was a burial cairn (Porter 2000: 315-6). A large round building of c. 23 m diameter was excavated at Tell al-Raq’i in the Middle Habur that appears to have served as a silo complex (see most recently Schwartz and Curvers 1992). At Tell Razuk in the Hamrin basin of northern Iraq, a large structure dubbed the ‘fortress’ (Fig. 4.5) of c. 15 m diameter was uncovered (Gibson 1981: 157-161). Also in the Hamrin at Tell Gubba, a
similar structure to that found at Tell Razuk was excavated, also c. 15 m in diameter
(Odani and li 1981: 141-163). More recently, what is believed to be a platform for a
temple was partially discerned at Tell Mozan (G. Buccellati and M. Kelly-Buccellati
1999).

Given these parallels, however, the function of the platform at Tell es-Sweyhat is
still unclear: unlike the example from Tell Banat, we have found no burial; unlike the
fortresses in the Hamrin and at Tell al-Raq‘i, no walls have been discerned; and unlike
the platform at Tell Mozan, we have found no temple atop the tell.
### Table 4.1 Dimensions (Approximate) of the Platform(s)

<table>
<thead>
<tr>
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<th>Phase 1</th>
<th>Phase 2</th>
<th>Final Phase 5/6</th>
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<tbody>
<tr>
<td>Circular Platform (Diameter)</td>
<td>11 m</td>
<td>17 m</td>
<td>23 m</td>
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<tr>
<td>Truncated Platform (Length East-West)</td>
<td>4 m</td>
<td>7 m</td>
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### Table 4.2 Construction Volumes (Approximate) of the Platform(s)

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<td>199 m³</td>
<td>2,557 m³</td>
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<tr>
<td>Truncated Platform</td>
<td>156 m³</td>
<td>72 m³</td>
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### Table 4.3 Number of Bricks (Approximate) Required to Build Platform(s)

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<tr>
<td>Circular Platform</td>
<td>18,857</td>
<td>8,747</td>
<td>112,396</td>
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<tr>
<td>Truncated Platform</td>
<td>6,857</td>
<td>3,165</td>
<td>40,879</td>
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### Table 4.4 Number of Persons Required to Make Bricks for Platform in 30 days

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<td>8-16</td>
<td>100-400</td>
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<td>Truncated Platform</td>
<td>6-12</td>
<td>2-4</td>
<td>36-72</td>
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Cho 41
Table 4.5 Number of Persons Needed to Stack Bricks in Platform in 30 days

<table>
<thead>
<tr>
<th></th>
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<th>Phase 2</th>
<th>Final Phase 5/6</th>
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<td>&gt;68</td>
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<tr>
<td>Truncated Platform</td>
<td>&gt;4</td>
<td>2</td>
<td>31</td>
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</table>
PART 5: Tell es-Sweyhat and Northern Mesopotamian Urbanism during the Third Millennium

Urbanism in northern Mesopotamia is markedly different from that which occurred in the more famous, more widely excavated, and unfortunately presently inaccessible (to American and British expeditions), southern Mesopotamia in present day Iraq (Van De Mieroop 1999; Lloyd 1984). This difference is partly the result of the separate environments under which urbanism developed in each respective region. The alluvial plains in the south are easy to irrigate since the Euphrates rises above the plain and irrigation canals can therefore be easily cut into its embankments (Ibid.). In the north, the Euphrates cannot so easily be harnessed, but the levels of precipitation available here allow dry farming alone to provide enough resources for settlements (Ibid.; Wilkinson 1994; Danti 2000).

- Urbanism in Southern Mesopotamia

These differences led perhaps to governments in the south developing more quickly because conditions there were especially fertile for state formation: a diverse environment, which once it was manipulated by centralized authority in such ways as irrigation projects, could support increasingly dense populations that became quickly segmented into specialized labor, leading to a more organized government (R. M. Adams 1966); the increasing interaction between growing settlements that lived in proximity to each other, such as Ur, Eridu, and Uruk, both in terms of warfare and trade that
necessitated even greater governance (Ibid.), the highway of the Euphrates facilitating larger networks of trade that fueled the desire for luxury goods and consolidated the position of the elites who commissioned additional projects, e.g. monumental architecture, to further strengthen their authority, leading to a scale of government that needed bureaucracy and, hence, writing (Van De Microop 1999: 34).

- Urbanism in Northern Mesopotamia and the Syrian Jezireh

Meanwhile, in northern Mesopotamia, the impetus for maximization of resources was not as strong as in the south. Here, the rains and diversity of the environment were sufficient enough to provide for the needs of agrarian communities. This and the low density of settlements, relative to the south, it can be argued, were not conducive to state formation. The prevailing understanding of northern Mesopotamian urbanism is that influences from southern Mesopotamia, i.e. the Uruk expansion (Algaze 1989), led to urbanism (Van De Microop 1999: 39). This initial urbanization was then followed by a spurt in the mid-third millennium fueled by the growth of such northern Mesopotamian urban polities such as Mari and Ebla (Ibid. 85).

Uruk, in southern Mesopotamia, grew to an estimated size of 494 ha, possibly housing as many as 50,000 people toward the late fourth millennium BCE (R. M. Adams 1960: 177). The influence of this enormous city may have extended westward to Egypt, eastward to Iran and northward into Anatolia (Algaze 1989). This civilization is believed to have expanded in order to setup and secure trade networks of which one particularly important route was that of the Euphrates River (Ibid.). The protection of this vital ‘highway’ led to the heavy presence of Uruk in northern Mesopotamia, thereby
accelerating urbanism here. Evidence of their presence has been noted in the Syrian Jezireh, particularly at Habuba Kabira (Ibid.; Strommenger 1980). Urbanization also began during this period in the Habur Plains, an area in northeastern Syria (Schwartz 1994; Weiss 1985).

Schwartz points, however, to a regression in socio political complexity in northern Mesopotamia following the disintegration of Uruk’s influence, for example at Tell Leilan (Weiss 1986; 1993), with the exception of places such as Mari (1994: 154-6). However, Uruk may still have been responsible for introducing the seeds of urbanization, the results of which would be visible in the long run.

The succeeding period of urbanism in northern Mesopotamia during the mid-third millennium was a “second urban revolution” documented in the Ebla archives (Schwartz 1994: 166). It seems that once the Uruk influence receded, the settlements not influenced by Uruk, or that had regressed after its collapse, increased in size and these locally developed cultures were of sufficient size to construct fortifications (Curvers 1989: 186). Under indigenous processes, these sites grew until all the arable areas of northern Mesopotamia were settled. “The density of settlement might have contributed to conflicts between them – one of the factors favouring the emergence of a local aristocracy which exercised political power and was represented by a “king,”” suggests Klengel (1992: 19). While the area to the southeast of the Euphrates was dominated by the newly emergent states of Mari and Ebla (Ibid.), to the northeast of the Euphrates in the region of the Khabur, sites such as Urkesh (Tell Mozan (G. Buccellati and M. Kelly-Buccellati 1999)), Nagger (Tell Brak (D. Oates and J. Oates 1994)), and Tell Leilan continued to grow and become full-fledged regional centers (Schwartz 1994; Weiss 1990). Weiss suggest that in
the case of Tell Leilan, influences from southern Mesopotamia helped transform a once simple village into a settlement with a centralized economy (Weiss 1993: 997-998).

In the late third millennium BCE, Weiss writes, the Akkadian empire in southern Mesopotamia expanded and Tell Leilan and Tell Brak were under its control (1993: 998-9). This expansion, it has been suggested, was also responsible for the collapse of Mari and Ebla (Kuhrt 1997: 49). However, this expansion was followed by a climatic shift that precipitated the collapse of settlements in northern Mesopotamia (Weiss 1993). At Tell Leilan and Tell Brak, there was a sudden abandonment brought on by extensive crop failures (Ibid. 999).

- Tell es-Sweyhat in the Early Third Millennium BCE

The so-called Uruk outpost of Habuba Kabira is not far from Tell es-Sweyhat, being across the river and downstream c. 50 km. Even closer, however, is the site of Jebel Aruda (van Driel and van Driel-Murray 1979, 1983), lying just across the Euphrates from Tell es-Sweyhat (Danti 2000: 257-258). The influences from these sites could very well have had some effect on urbanism in the region of Tell es-Sweyhat. Danti notes that Tell es-Sweyhat was probably not within the sphere of Uruk influence (Ibid: 258), and no material that bears resemblance to the Uruk assemblage has been found here. Danti does say that some pottery and architecture from the earliest phases of Hajji Ibrahim bear slight resemblances to Uruk forms (Danti pers. comm. March 2001). Remains from the Late Chalcolithic period, i.e. the late fourth millennium, have been found only at the fringes of the plain in which Tell es-Sweyhat sits (Danti 2000: 258). Perhaps at Tell es-Sweyhat, they still await excavation in the deepest areas of the main mound.
What appears to have happened is that in the early third millennium, settlements around Tell es-Sweyhat were steadily abandoned, while Tell es-Sweyhat grew. Danti’s agro-pastoral model for Tell es-Sweyhat suggests that Tell es-Sweyhat became a redistributive center in a “highly-integrated mixed economy emphasizing pastoralism” (2000: 298) leading to a “gradual process of population centralization and/or sedentarization [...] in effect in the second quarter of the 3rd millennium BC” (Ibid. 300). Understanding this local cultural process is difficult, because of the general lack of material evidence from this period (Dornemann 1990: 86).

What is apparent is that at Tell es-Sweyhat, there was some redistributive mode in effect during the early third millennium BCE. The evidence of the mud brick platforms indicates that a high proportion of the population was engaged in non-subsistence labor undertaken with some collective purpose. Although the subsistence needs of this labor force could have been met privately, it is likely that as a work force, they would have been managed through a centralized agent.

In order to muster the necessary resources for the platform’s construction, it therefore seems necessary that Tell es-Sweyhat’s productivity would need to have been high enough to support the public works that the platforms represent. For example, the amount of straw needed to build the mud bricks would have been prohibitive unless it was deliberately accumulated. White notes that increasing productivity moves a population toward greater specialization, leading in turn to stratification and the reduced importance of kinship relationships. Contract-based organizations with large public projects particularly cleaved society into disparate parts (White 1956: 300). The apparatus that controlled the distribution of energy in the form of prestige or food, notes
R. N. Adams, would have kept it within their limited social strata through such means as hereditary lines (R. N. Adams 1978: 304).

Although, some weaponry and minor luxury goods were found in the tombs of the lower town dated to the mid-third millennium (Zettler 1997b) that gives some indication of a warrior class/elite, if not in the early-third millennium then later, there is no clear mortuary evidence for large-scale social stratification. This stratification can somewhat be assumed, however, given the need for labor management, but cannot be taken for granted. Large labor forces can also be mobilized in egalitarian societies as Renfrew notes (1972). However, H. Wright argues that because agricultural production naturally varies from year to year, regulation of a production economy, such as would be required to accumulate material resources for mud brick, would demand greater political organization into a person or segmented group that made decisions for the rest of the society (1984: 65). Chirot cites two types of leaders to emerge from this situation: mediators who could resolve disputes about land and resources and war leaders who could protect or appropriate new resources (1994: 15).

The question of demographics and its effects on social change (Boserup 1965) seems to be less relevant in the case of Tell es-Sweyhat. Although the effect of population increase over time would have necessitated some degree of long-term social change, the data at Tell es-Sweyhat suggests that social change caused population increases, rather than the other way around. It appears that the agglomeration of the local population at Tell es-Sweyhat was a gradual process. There was, however, probably a feedback loop between population growth and social change.
More intriguingly, White presents a paradigm in which an increase in the energy controlled per capita by a society moves it toward greater complexity (1949). White links this control with technological evolution and notes that “social evolution is a consequence of technological evolution” (White’s italics 1943: 347). In terms of this dynamic between social evolution and technological evolution, there is a third factor, which White views more as an outcome rather than a cause: social evolutions can also influence innovations in energy management. With this refinement of White’s model in mind, Tell es-Sweyhat’s growth could be seen as the result of increased social complexity able to harness more and more energy. Danti’s suggestion that this social complexity could have taken the form of economic redistributive measures based at Tell es-Sweyhat indicates that perhaps the social evolution involved was one that changed the social framework of economic interactions (Danti 2000: 301). Instead of kinship-based relations, there was a move toward greater social/economic networks of non-kin, organized around Tell es-Sweyhat.

Among the results of this social-complexity are the mud brick platforms. They are tangible examples of the harnessing of energy. R. N. Adams views civilization as comprising triggers that effect cultural evolution (1988: 163). From this perspective, the mud brick platforms could have encouraged outlying peoples to view Tell es-Sweyhat as a regional center; further augmenting its position as a regional power. Finkelstein and Bunimovitz note the phenomenon of huge earthen ramparts in the southern Levant during the MBA and suggest Veblen’s notion of conspicuous consumption. They argue that the ramparts promoted social stratification by consolidating the position of ruling elites through architectural displays of power (Finkelstein 1992; Bunimovitz 1992). The mud
brick platforms at Tell es-Sweyhat could have had a similar role, albeit on a smaller scale.

- **Tell es-Sweyhat in the Mid to Late Third Millennium BCE and the MBA**

  By the mid-third millennium BCE, Tell es-Sweyhat reached a prominence that identified it as a regional center suitable for an alliance with Ebla. Many such sites on the periphery seem to have been engaged in such alliances (Klengel 1992), probably aimed at securing the heartland of Ebla from nomadic incursions from the north. This seems to have fostered additional economic growth, probably in the pastoral industry (Danti 2000: 301). This alliance was cemented through marriage (Zettler 1997a), which might have had the effect of increasing levels of surplus (Danti 2000: 302). After the demise of Ebla, Tell es-Sweyhat would have stepped into the local vacuum of power. What exactly followed is not entirely clear, but the further growth of Tell es-Sweyhat might have been the result of local investment of surpluses that once went to Ebla (Ibid. 304). Counter to the model of climatic change, Tell es-Sweyhat seems to have grown in the late third millennium BCE, rather than shrinking. If the climatic model is true, however, Tell es-Sweyhat represents a distinct anomaly, given that its environmental precariousness would have been further compromised, making agro-pastoralism impossible (Zettler pers. comm. Feb 2001).

  Once it reached its maximal size of 40-45 ha, Tell es-Sweyhat began to enter its decline in the early second millennium into the MB IIB (1800-1600 BCE), due perhaps to over-intensification of its agro-pastoral economy in conjunction with successive years of drought (Danti 2000).
PART 6: Conclusions

Our excavations are ongoing and our data sets are fragmentary. The phasing of the site in its early stages is still tentative. On the main mound, virgin soil has only been reached in the area of Op.1. Furthermore, the discovery of the mud brick platforms will require several seasons of excavations in order to be fully understood. If the platforms are indeed as enormous as our initial estimates suggests, it will be some time before they are fully exposed and the phases of their construction determined. A slightly lesser amount of time, perhaps one season, will be needed to fix their stratigraphic position within phases 1-3, i.e. before the mid-third millennium BCE. In this respect, this thesis is a preliminary evaluation of our current data and must be kept in mind as such.

Based on current understanding of the data, urban development at Tell es-Sweyhat can be summarized as follows:

1) Urbanism in the late third millennium at Tell es-Sweyhat appears to have been the culmination of a long process that began in the late fourth to early third millennium BCE (Danti 2000).

2) At various points in time, these processes are catalyzed: by the patronage of Ebla during the mid-third millennium BCE; and then via a response to the patron state’s collapse in the late third millennium BCE (Zettler 1997a). Following this collapse, Tell es-Sweyhat entered its floruit and reached its maximum size of 40-45 ha.
3) The size of the population in the late-third millennium BCE may have led to overgrazing of the surrounding pastures (Danti 2000). Overgrazing coupled with the episodic cycles of drought common to the region (Wilkinson 1994) could have precipitated the collapse of Tell es-Sweyhat at the beginning of the second millennium BCE (Ibid.).

4) In relation to the scenario given above, the organization of labor in the early third millennium BCE indicates an administrative climate that may have fostered the economic maximization of the hinterlands, perhaps precipitating the collapse of adjacent sites, such as Hajji Ibrahim. The growth of the later city is therefore anchored in this period.

5) The mechanisms that gave rise to the social complexity underlying the early third millennium BCE administration of Tell es-Sweyhat have not yet been discerned. The strata containing this data have not yet been discerned anywhere on the site, but may lie at the very core of the main mound: a high probability given that late Chalcolithic levels (late fourth millennium BCE) have been excavated at Hajji Ibrahim.

Louis Wirth writes:

*The influences which cities exert upon the social life of man are greater than the ratio of the urban population would indicate; for the city is not only increasingly the dwelling-place and the workshop of modern man, but it is the initiating and controlling center of economic, political, and cultural life that has drawn the most remote communities of the world into its orbit and woven diverse areas, peoples, and activities into a cosmos.*
Tell es-Sweyhat exhibits the underlying foundations of urbanity in the early-third millennium BCE. It was a center that controlled the economic resources of its surroundings, producing structures of spectacle, i.e. the mud brick platforms, and perhaps acting as the cultural symbol to which the surrounding inhabitants were tied. The development into a regional center seems to have been locally based and represents an adaptation to local environmental conditions.

In terms of social evolution, Tell es-Sweyhat represents the natural outgrowth of populations adapting increasingly complex social forms. Although this initial push has not been identified, i.e. why Tell es-Sweyhat became a regional center as opposed to other nearby sites, its effects are obvious. The high degree of social organization exhibited by the construction of the mud brick platforms tells us that the inhabitants of Tell es-Sweyhat saw themselves as belonging to larger and larger spheres of contacts in a network that breached the tight groupings of kinship. As long as they saw a need for one another, the result was a cohesive entity capable of putting itself into tasks such as monumental construction. The hundreds of inhabitants saw themselves as being necessarily attached to one another, perhaps to gain the benefits of centralized authority and reap the benefits of redistributive networks centered there. Or perhaps the lure of gathered people attracted others on the periphery to come there for the security and also for the bustle and economic opportunities of the city. It is also clear, however, that once this urban entity could not provide enough for its constituents, the inhabitants, stripped of their need for each other, quickly dissipated and made Tell es-Sweyhat’s collapse imminent.
1970's Exc. Area IV
1989-98 Exc. Op 1
Magnetic Survey
City Wall

TELL ES-SWEYHAT Fig. 3.
(Courtesy of Michael Danti)
Fig. 3.1 Looking eas: up the trenches on the west slope of the main mound (Op.12 in middle and foreground)
Fig. 3.2 Stone foundations in front of skirt

Fig. 3.3 Stone facade of final phase

Fig. 3.4 Join between final phase and fill

Fig. 3.5 Excavations west of 10x10 m trench

Fig. 3.6 Wall west of 10x10 m trench
Fig. 3.7 Op. 12 Trench looking east

Fig. 3.8 Jumbled bricks in Op. 12 South Section

Fig. 3.9 Bricks laid diagonal to trench

Fig. 3.10 'Half-arch' visible in Op. 12 South Section

Fig. 3.11 'Half-arch' visible in Op. 12 North Section
Fig. 3.12 Plaster on the 'Core' Platform (right) and the white plaster of the 'skirt' (left)

Fig. 3.13 Op.12 East section

Fig. 3.14 The 'Core' platform
Fig 3.15 Bird's-eye sketch of mud bricks in Op.12

Fig 3.16 Top plan of 'Core' platform
1) Core platform
2) Buttress
3) Mud brick filler (skirt removed)
4) 'Finger' in front of skirt
Fig 3.17 Op. 12 East Section
1) Brick debris
2) Stacked mud brick
3) Smoke blackened mud brick
4) Brick thrown into fill
5) Crack lines
Fig. 3.18 South section of Op. 12 and Op. 29

Occupational strata

1) 'Core' Platform
2) 'White skirt'
3) Finger construction
4) Mud brick filler
5) Mud brick filler
6) Final phase of platform

a) Walls
b) Buttress of 1
c) Gray-green ash layer

Fig. 3.19 North section of Op. 12 and Op. 29
Fig 4.1 View of core platform with isometric skeleton overlaid
Fig 4.2 Phase 1: The 'Core' platform (circular reconstruction)

Fig 4.3 Phase 2: The 'Skirt' (circular reconstruction)
Fig 4.4 Final Phase (Circular Reconstruction)

Fig 4.5 Artist's reconstruction of 'Fortress' at Tell Razuk, Iraq (Peggy Bruce Sanders from Uch Tepe II ed. McGuire Gibson 1981)
Fig 4.6 Phase 1: The 'Core' platform (truncated reconstruction)

Fig 4.7 Phase 2: The 'Skirt' (truncated reconstruction)
Fig. 4.8 Final Phase (Truncated Reconstruction)
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