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Special-Purpose Settlement at Heit el-Ghurab, Giza

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The Ground Plan as a Tool for
The Identification and Study of Houses in an Old Kingdom
Special-Purpose Settlement at Heit el-Ghurab, Giza

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Near Eastern Languages and Cultures

by

Mohsen E Kamel

2015

ABSTRACT OF THE DISSERTATION

The Ground Plan as a Tool for
The Identification and Study of Houses in an Old Kingdom
Special-Purpose Settlement at Heit el-Ghurab, Giza

by

Mohsen E Kamel

Doctor of Philosophy in Near Eastern Languages and Cultures

University of California, Los Angeles, 2015

Professor Willemina Z. Wendrich, Chair

The ground plan is an essential goal of the settlement archaeologist. For the archaeologist who would attempt to glean evidence of settlements of the Old Kingdom (c. 2543 - 2120 BCE), the ground plan is most often the ultimate goal, for although the seemingly eternal stone funerary monuments of Giza dominate the Old Kingdom landscape (both literally and figuratively), the Pyramid Age has not left standing the mudbrick walls of the houses within which people lived--the preponderance of Old-Kingdom wall remnants comprising mere centimeters. Without an accurate ground plan, material culture and faunal and botanical evidence have no context. This study presents a detailed, concrete analysis and comparison of the ground plans of two structures that can be interpreted as houses from the Old Kingdom, 4th-dynasty (2543 – 2436 BCE) settlement site of Heit el-Ghurab at Giza. The houses whose ground plans are presented here are representative of a corpus of unpublished probable dwellings from this site, which excavation

suggests was a “special-purpose” settlement that housed and provisioned the personnel engaged in the monumental constructions on the Giza plateau.

This dissertation of Mohsen E Kamel is approved.

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2015

Dedicated to my wife, Gina,
without whom this work and the rest of my professional life would have been way off track,
and to my father, who always wanted to learn more throughout his life.

*“The opening-up of the world affects us all,
becomes part of the general intellectual inheritance,
and the justification of archaeology is that it does in the end concern everyone. . . .
Its subject is modern man . . . and its material is the work of man’s hands. . . .
The surprise which a visitor to a museum expresses at the age of a given object . . .
is the surprise of one who sees his horizon suddenly opening out. . . .”*

--Sir Leonard Woolley
Digging up the Past (1930)

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2009 Mark Lehner, Mohsen Kamel, and Ana Tavares (eds.) *Giza Plateau Mapping Project Season 2004 Preliminary Report*, Giza Occasional Papers 1, Boston: AERA.

2009 Mark Lehner, Mohsen Kamel and Ana Tavares (eds.) *Giza Plateau Mapping Project Seasons 2006-2007 Preliminary Report*, Giza Occasional Papers 3, Boston: AERA.

2009 Mark Lehner, Mohsen Kamel, and Ana Tavares (eds.) *Giza Plateau Mapping Project Season 2008 Preliminary Report*, Giza Occasional Papers 4, Boston: AERA.

Chapter One: An Introduction

The ground plan is an essential goal of the settlement archaeologist. For the archaeologist who would attempt to glean evidence of settlements of the Old Kingdom (c. 2543 - 2120 BCE),¹ the ground plan is most often the ultimate goal, for although the seemingly eternal stone funerary monuments of Giza dominate the Old Kingdom landscape (both literally and figuratively), the Pyramid Age has not left standing the mudbrick walls of the houses within which people lived. A rare exception is the extant wall of two meters,² the preponderance of Old-Kingdom wall remnants comprising mere centimeters, and a minority offering upon surface scraping a faint outline. Without an accurate ground plan, the important supporting evidence from material culture and faunal and botanical remains has no context. Happily there is no need to indulge in stagnant, timeworn lamentations on the paucity of settlement archaeology conducted in Egypt. As this study illustrates, today the continuing search for tombs and temples takes place alongside the excavation of ancient urban centers throughout the Nile Valley, an increasing number of them emerging from the Old Kingdom: the tide has turned and we are already moving forward.

This study presents a detailed, concrete analysis and comparison of the ground plans of two structures that can be interpreted as houses from the Old Kingdom, 4th-dynasty (2543 – 2436 BCE) settlement site of Heit el-Ghurab at Giza (**fig. 1.1**). (The interpretation of these structures as “houses” is discussed in Chapter Three, below.) The houses whose ground plans are presented here are representative of a corpus of unpublished probable dwellings from this site, which excavation suggests was a “special-purpose” settlement that housed and provisioned the personnel engaged in the monumental constructions on the Giza plateau (Lehner 2007). Sealings

¹ Dates presented in this study are those of the chronology of Hornung, Krauss, and Warburton, eds. (2006).

² “Structure A,” in Elephantine’s *Oststadt* (see Chapter Two, below), featured (some) exceptional two-meter-high walls.

and ceramic evidence date the latest occupation of Heit el-Ghurab to the reign of pharaoh Menkawre (c. 2447 – 2442 BCE), the builder of the Third Pyramid, while underlying strata hint at occupation dating to the reign of Khafre (c. 2472 – 2448 BCE), the builder of the Second Pyramid (ibid.). Future excavation may reveal the settlement to have been occupied during the reign of the Great Pyramid’s builder, Khufu, as well.

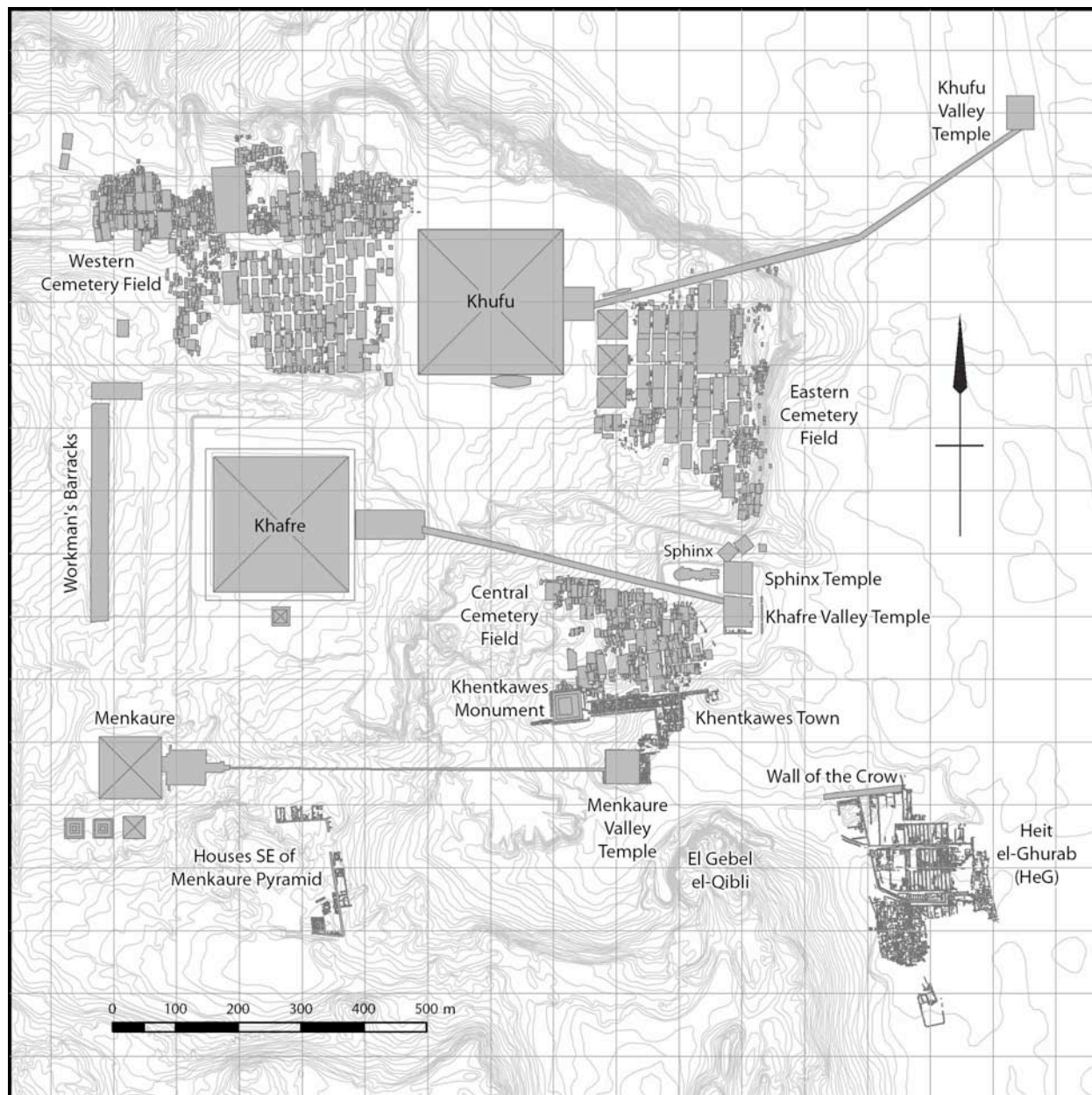


Figure 1.1. Giza Plateau with Heit el-Ghurab (lower right) in context (digitized by Rebekah Miracle).

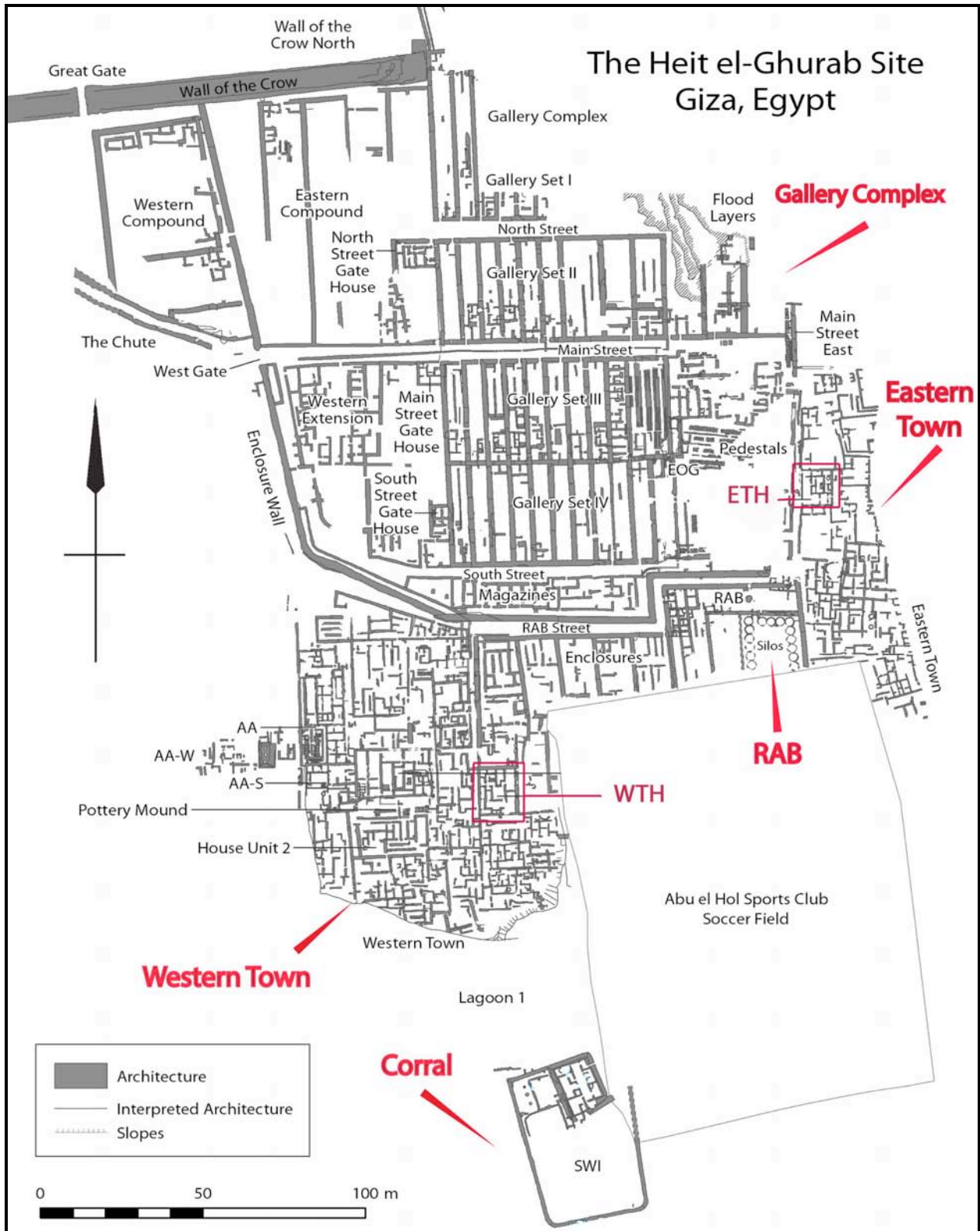


Figure 1.2. Functional regions of Heit el-Ghurab with the Eastern Town House (ETH) and the Western Town House (WTH) outlined (digitized by Rebekah Miracle).

The site of Heit el-Ghurab comprises a variety of contrasting “functional areas” (**fig. 1.2**). The two ground plans analyzed here were selected primarily because each represents a possible house from a wholly distinct area of the settlement. The contrasting character of these structures is expressed in their simple designations: “The Eastern Town House” (ETH) and “The Western Town House” (WTH) (see **fig. 1.2**). The ground plan of the Eastern Town House presents a model of a complete structure that may be representative of an area of the site that exhibits relatively small architectural units and appears to have grown organically. The Western Town House, in contrast, lies in an opposite area of the site featuring larger and more regularly laid out architectural units. Thus each of the two ground plans selected for study may represent a dwelling occupied by inhabitants of a different socioeconomic group.

1.1 Research Design

This study was guided by a clear research design that sought the answers to the following questions applied to both the Eastern Town House and the Western Town House:

1. Does its ground plan reveal it to be a house?
2. Does its ground plan show us how its space was used and organized? Was form related to function?
3. Does its ground plan reveal change over time?
4. What was its relationship to the immediate surroundings and to the broader context of Heit el-Ghurab? Does its ground plan indicate the socioeconomic status of its inhabitants and thereby add to our understanding of the overall workings of the Heit el-Ghurab site?
5. How do the two houses, as revealed through their ground plans, compare to each other?
6. How do the ground plans of the two houses compare to those of other Old Kingdom houses outside of Heit el-Ghurab? Is there a house paradigm that can be identified for the Old Kingdom, or the 4th Dynasty specifically?

An equally straightforward strategy was employed in addressing these questions. First, and transparently foremost, it was necessary that the two structures be excavated, their data recorded, and their respective ground plans mapped. Excavation of the Eastern Town House, discussed below, was conducted by the team of Ancient Egypt Research Associates, Inc. (AERA), under the direction of Mark Lehner. For the purposes of this study, and as a member of the AERA team, I undertook the Western Town House's excavation, under the direction of Mark Lehner, and with assistance from AERA team members. A specific description of the two houses as revealed through their respective excavations, and ground plans produced thereof, is provided in **Chapter Three**. Inasmuch as an understanding of the internal structure of an individual dwelling is important to an understanding of the larger system of the settlement of which it is a part, as Bill Hillier and Julienne Hanson affirm (1984: 123), the detailed information in Chapter Three will contribute to our understanding of the Heit el-Ghurab site. The descriptions provided will allow the first four research questions to be addressed. Added to the above list is a personal hope that the third chapter will allow the reader to come away with concrete impressions rather than mere abstractions, and with at least a nascent answer to the fundamental question: "What did the houses look like?"

Secondly, a review was made of prior research and relevant literature on houses of the Old Kingdom—and specifically of the 4th Dynasty where extant—to constitute a backdrop of information against which to compare the two study-houses from Heit el-Ghurab. This review is presented in **Chapter Two**.

Chapter Four comprises a comparative analysis of the Eastern Town House and Western Town House based on the research presented in Chapters Two and Three. It is here that the remaining two research questions will be addressed.

In the course of the present research I undertook a brief ethnoarchaeological study of “traditional” Egyptian houses standing today in both Upper and Lower Egypt in order to provide a reference of comparative material to enhance our understanding of how space was used anciently. While the contribution of ethnography to the archaeological study of settlements and houses should not manifest itself in direct parallels or causal relationships between a contemporary society and the remains of an ancient one, Peter Ucko rightly affirms: “The primary use of ethnographic parallels . . . is simple. It is to widen the horizons of the interpreter. . . It is true to say that the careful use of ethnographic data has served to do one major thing—to present the possibility of varied and heterogeneous reasons or causes for a practice” (1969: 262). Citing the advantages of the comparative method, Ucko explains that when research draws upon a variety of ethnographic findings, “. . . the result is a multiplicity of possible explanations of a particular set of archaeological data” (ibid.: 264). The ethnographic data gathered in the course of the present research—from photographs, ground plans, and interviews with occupants, with whom this researcher (I being Egyptian) had the advantage, and privilege, of conversing in our native Arabic—comprises the **Appendix**.

1.2 Research Tools

While this study is placed in an empirical rather than theoretical framework, it draws from an underlying concept of spatial organization emphasizing the inequality of “inhabitant-visitor relations,” articulated by Hillier and Hanson in their 1984 work, *The Social Logic of Space*. A building, as expressed in their research, is of its nature about relationships of inequality: an inhabitant of a building is “one who is a privileged adherent of some domain of knowledge ascribed in the spatial structure and social purpose of a building,” while non-

inhabitants (visitors) in the building are only “petitioners” (1984: 194). Perhaps this is a lofty way of stating the obvious. The consideration of houses in these terms, however, helps elucidate factors of social status and associated control of space, as will be demonstrated in this study (most apparently in the section on Elephantine’s “House A” in Chapter Two, and in the discussion of the Western Town House in Chapter Three). Also incorporated, where possible, in the analyses of the domestic structures below is the access and flow diagram (Hillier and Hanson 1984). While its usefulness is limited (it does not change what we find on the ground—or the ground plan), the access and flow diagram, like the ground plan, is a visual tool that can bring into sharper focus relationships that we may not otherwise see (or see as clearly); it complements the ground plan and helps to show how space between the walls was organized.

In the following discussions of how space was used anciently and how the use of space changed over time, we would do well to remember that pre-modern houses, which lacked permanent installations such as central heating and plumbing, and which required continuous maintenance and repair (earthen floors need to be constantly swept, plastered walls need to be patched, etc.), comprised spaces that were more easily changed and whose functions were more fluidly interchangeable than those of “modern” houses (Oliver 1990: 38-39).

*1.3 What constitutes an Old Kingdom house?*³

In his classic 1932 analysis of the ground plans of houses in the 18th-dynasty city of Tell el-Amarna, *Der Grundriss des Amarna-Wohnhauses*, Herbert Ricke observed that the dwellings presented a tripartite plan (*Dreiraumgruppe*) consisting of: 1) an area linking the household with

³ In considering what constitutes a “house” in general, I am reminded of Paul Oliver’s opening declaration (1987: 7): “All houses are dwellings; but all dwellings are not houses.” I offer that a house is a physical structure that provides the potential for permanently supplying one’s daily needs: shelter from the elements, a place to sleep, and a place to prepare food. In this regard I am partial to Hillier and Hanson’s simple “everyday living space” (1984: 15).

the general public; 2) an area in which the household members spent most of their time; and 3) a sector of private living quarters (Ricke 1932: 25-42). Indeed Ricke suggested that the tripartite arrangement comprised the core of domestic architectural design from the earliest periods (ibid.: 13-15, and note 1), a concept seconded by Arnold in its application to the Middle Kingdom (1989: 78) and acknowledged in passing by Badawy in reference to the Old Kingdom (1966: 45).

The use of Tell el-Amarna—the short-lived capital city built by the “heretic” pharaoh, Akhenaten, in dedication to the worship of the Aten sun-deity—as a model for making comparisons has been widely criticized due to the city’s aberrant nature (Kemp 1984; Bietak: 1979: 98; Lacovara 1997: 60; although Spence [2010, 2015] is of the opinion that Tell el-Amarna can be considered, at least, as representative of its time). It is a reality, however, that Ricke’s deft observation offers what little the archaeologist has to work with in attempting the study of Old Kingdom houses, in addition to actual ground plans, where they exist. For it is another (less fortunate) reality that the exigencies of excavation often leave the archeological surface barely scratched, in the most literal sense, as precious few Old Kingdom sites⁴ have produced (perhaps as a result of time constraints or funding limitations) detailed ground plans of individual houses, together with comprehensive site maps that illustrate their context.⁵

The following chapters, then, will make use of the concept of the tripartite plan as a starting point for the study of Old Kingdom houses; whether the plan bears up will become evident under scrutiny of the ground plans presented.

⁴ Cagle’s maps (2003: 3, 14) locate possible Old Kingdom settlements virtually dotting the length of the Nile Valley and Delta.

⁵ Pottery “soul houses,” dated to Dynasties IX-XII by Petrie (1907a; 1907b: pls. 15-22), erratically dated and referenced by Badawy (1954: 57), and not always provenanced, are of uncertain value. They do provide satisfying visual confirmation of second stories and windows, New Kingdom evidence for which is covered by Koltsida (2007: 52, 123-124).

1.4 An Orientation to Heit el-Ghurab

Since 1988 the team of Ancient Egypt Research Associates (AERA), under the direction of Mark Lehner, has been excavating the site of Heit el-Ghurab, just south of the Giza Plateau, where lie the Giza pyramids (see **figs. 1.1 and 1.2**). To date the team has exposed seven hectares of a complex Old Kingdom settlement associated at its latest occupation phase with the construction of the third pyramid, that of pharaoh Menkawre, who ruled toward the end of the 4th Dynasty (2447 – 2442 BCE). A wide-spread layer of alluvial mud, varying in thickness from 1.0 cm to 25.0 cm, caps a large expanse of Heit el-Ghurab, primarily on the east (the side closest to the Nile). The yearly inundation of the Nile accounts for this, along with the dissolving action of the flood waters upon the ancient mudbrick architecture. More accurately, the alluvium would have been the result of the inundation of the irrigation system of canals and dykes, stretching westward from the river (the ancient Libeini Canal being 2.5 kilometers to the east), that had gone out of use after Heit el-Ghurab was no longer active (Bunbury and Jeffreys 2010: 65-65; Lehner 2007b: 37-39, fig. 19; Lehner 2015 a and b).

A monumental ancient wall, known locally as “The Wall of the Crow” (in Arabic, *Heit el-Ghurab*), defines the settlement’s northern boundary and gives the site its name. To the south of this wall, within the settlement itself, we have defined a number of “functional areas” separated by less substantial walls and by roadways, some of them controlled by manned gate-houses. The northern area contains industrial-sized bakeries and a vast complex, nay system, of “galleries”: orthogonal blocks of long, narrow, modular structures with sleeping platforms that may have housed the workforce engaged in the monumental constructions on the Giza Plateau (Lehner 2007a). In the southeast portion of the site lies an extensive formal structure, the “Royal Administration Building” (RAB), which contains a number of large silos for grain storage and

was possibly associated with the town's administration. Our exposure of this building is limited due to the presence of a modern soccer-field (belonging to the neighboring community of Nazlet el-Simaan), which dominates, and unfortunately conceals, the entire southeast corner of our concession. The southwest district, or "Western Town," is characterized by relatively large structures, possibly residences for state officials, and appears to be the product of both formal and organic growth. An area we refer to as "Eastern Town" lies to the east of the galleries and the Royal Administration Building and presents a maze of organic architecture.

At the soccer field's southwest corner, remains of a rounded sub-rectangular stone wall indicate the presence of a corral with abattoir, probably for beef cattle that fed the workforce housed in the galleries (Redding 2011; Lehner 2015c, 2011a).

Mark Lehner has recently put forth an emerging hypothesis (2014), based on analysis of the topography of the Giza Plateau and years of accumulated data, including information derived from drill coring in the Nile flood plain,⁶ that the Heit el-Ghurab site was served by a major Nile harbor with man-dug marinas and basins that facilitated the delivery of supplies. It is conjectured that such a harbor would have been needed, for example, for the reception of massive loads of heavy stone required for the construction of the pyramid complexes on the Giza Plateau, for the incoming deliveries of heavy commodities, such as cattle, and to serve as the point of disembarkment for the pharaoh's riverine funerary procession (Lehner 2013).

Topographically, Heit el-Ghurab lies at the southeast foot of the Giza Plateau. Immediately to the west of the site rises the Maadi Formation, while the Moqattam Formation emerges further to northwest. Sandwiched between the two escarpments is a low-lying *wadi* (valley).

⁶ Conducted in the early 1990s by an internationally funded project to install sewage systems in the neighboring communities (see Lehner 2014).

On the slope of the Maadi Formation west of Heit el-Ghurab rests the Old Kingdom “Workers’ Cemetery” (Hawass 1996) of artisans, administrators, and (arguably) workers who participated in building the monuments on the Giza Plateau. It is keenly hoped that further excavation will clarify the cemetery’s relationship, and possible contemporaneity, with our Heit el-Ghurab site.

A Word on Mudbrick at Heit el-Ghurab

Ashraf Abd el-Aziz, a senior AERA archaeologist and a member of Egypt’s Ministry of Antiquities, conducted a typological study of the ancient mudbrick found at Heit el-Ghurab (Abd el-Aziz 2008: *The Sun-dried Brick Typology in Giza*, on file with AERA). He found that three brick compositions appear at our site:

- sandy mud bricks (50% Nile clay and 50% desert sand)
- marl bricks (desert clay containing decayed limestone)
- Nile clay bricks (Nile alluvium with occasional desert sand).

Abd el-Aziz also assessed that the bricks of Heit el-Ghurab occur in sizes ranging from small to medium to large:

- 26-28 cm long x 13-14 cm wide x 7-8 cm thick
- 30-38 cm long x 15-19 cm wide x 8-12 cm thick
- 40-42 cm long x 20-21 cm wide x 12 cm thick

The most common brick type at Heit el-Ghurab is sandy mud brick. This composition is found in all brick sizes, while marl and Nile clay bricks occur at our site in the medium and large sizes only (Abd el-Aziz 2008).

Chapter Two: Overview of Prior Research

While John Wilson claimed, to much ensuing controversy, that ancient Egypt had no cities (Wilson 1960), it may be more accurate to state that ancient Egypt had no cities that did not serve a special purpose, be it as a cult center, a fort, or a town dedicated to the building of royal funerary monuments, such as Heit el-Ghurab. Further excavation of urban centers throughout the Nile Valley will ultimately determine the validity of this statement. To date, Old Kingdom houses that have been, or are being, excavated are located in what appear to be special-purpose settlements (and see Arnold 1998: 1), the primary examples being the fortress settlements of Balat, Buhen, and Elephantine, the cult centers of Hierakonpolis and Abydos, and the centers dedicated to funerary-monument construction and mortuary cult at Giza.⁷



Figure 2.1. Excavated Old Kingdom settlements overviewed in Chapter Two (Google Earth map).

⁷ Anthony Cagle's analysis (2003) of the Old Kingdom town of Kom el-Hisn in the western Delta leaves abstract impressions of an apparent cattle-producing/exporting community. Faunal analyst Dr. Richard Redding (personal communication 2015) tentatively conjectures that the town may have been one of a number of suppliers of beef-cattle to Heit el-Ghurab.

Of relevance to this study are those Old Kingdom settlements whose excavations have (ideally) produced ground plans of 4th-dynasty houses with which to compare, in Chapter Four, the ground plans of the Eastern Town House and Western Town House at Heit el-Ghurab. A reality of the research is that not all excavations have published this data. As such, the overview below touches briefly upon examples of houses in the special-purpose categories of fort settlement, cult center, and mortuary-cult center, focusing more closely on those settlements where house plans have been made available.

Hierakonpolis. British excavators James Quibell and Frederick Green conducted excavations at the site of this early Upper Egyptian walled capital, and temple-based cult center of the god Horus, in the late nineteenth century (1897 – 1899) through the Egyptian Research Account (**fig. 2.1**). Quibell published *Hierakonpolis: Part I* in 1900 and *Part II*, with Green, in 1902. According to Quibell, the entire area within the enclosure wall was occupied by Old Kingdom houses in a ruinous state of preservation. While a wealth of historically rich material culture is documented, the houses, dated to the Old Kingdom by sealings and ceramic evidence (Quibell and Green 1902: 16-18), are obscurely represented in the site plans (1902: plates LXVIII and LXXIII) and offer scant information beyond an apparent homogeneity of room sizes.

Balat (Ain Asil). Since 1977 the *Institut français d'archéologie orientale* (IFAO) has been excavating the extensive fortified habitation site of Ain Asil (variantly spelled “Ayn Asil” and “Ain Asul”) and its necropolis, Qila al-Dabba, collectively referred to as “Balat,” in the Dakhla Oasis (see **fig. 2.1**), taking up the work of Ahmed Fakhry, who discovered and partially cleared the ancient architecture before his death in 1973. At this writing, Georges Soukiassian is the director of the on-going mission, whose findings are regularly published in the *Fouilles de L’Institut français d’archéologie orientale* (IFAO). Excavation has revealed a fortified

compound including late-6th-Dynasty and First-Intermediate-Period houses integrated, both spatially and in a more complex relationship of mortuary-endowment dependency, with a central governor's palace (Soukiassian, Wuttmann, and Pantalacci 2002).

Giza: Southeast of the pyramid of Menkawre. During two seasons of excavation (in 1971 and 1972), the late Cairo University professor Abdel-Aziz Saleh investigated the pyramid causeway of 4th-dynasty pharaoh Menkawre at Giza (see **fig. 2.1**). His excavation revealed parts of two massive L-shaped embankments with attached architecture of an apparently industrial and domestic nature—including workshops, storage facilities, probable “pedestals” (structures for grain storage found at the possibly contemporaneous site of Heit el-Ghurab, discussed below), and a scattering of simple, irregularly laid out dwellings—all of stone rather than mudbrick construction (Saleh 1974, 1996). Saleh assessed that he had found a community dedicated to the preparation of offerings for the funerary temple of Menkawre's pyramid (ibid.: 142; 1996), 180 meters to the northwest. He described his research in *Mitteilungen Des Deutschen Archäologischen Instituts, Abteilung Kairo, Band 30: I* (1974: 131-154) and *Haus und Palast im Alten Ägypten*, edited by Manfred Bietak (1996: 185-193). Further excavation, and the preparation of detailed plans, is necessary to determine the extent of the site, its nature, and its relationship to the neighboring sites of Heit el-Ghurab and the Khentkawes Town, discussed below.

2.1 Elephantine

The island of Elephantine, spanning 1.2 km north-south by 400 m east-west, lies opposite the present-day city of Aswan, just downstream from the First Cataract (**figs. 2.1 and 2.2**). Elephantine formed a border outpost between Egypt and Nubia through most of the Dynastic Period, being strategically located for both defense and trading (Kaiser 1999). It was also the

capital of the first Upper Egyptian nome (*T3-stj*), its nomarchs holding the title “Guardian of the Southern Gate” (Habachi *LA*: column 1217).

In many respects the geography of Elephantine determined the nature and growth of its settlement. The island is composed of huge, water-worn granite boulders that rise sharply from the Nile. Autobiographies of 6th-dynasty expedition leaders⁸ inform us that one of the sources of granite for royal building projects was indeed Elephantine, a claim corroborated by archaeological evidence there of granite-working from the 4th Dynasty (Kaiser et al. 1982: 299). Its original topography comprised two islets, the “Eastern” and “Western,” each formed by a natural granite outcrop (**fig. 2.2**). The lowland wadi between these ridges was cultivable land, subject to flooding by the Nile inundation. Consequently ancient architecture is first found on the higher ground and engineering efforts were made in the 3rd Dynasty to bolster the embankments where the river infiltrated, essentially creating a harbor (Raue 2004, 2005). Elephantine has been inhabited since at least the late Predynastic Period, today being occupied by a Nubian village and museum of antiquities, thus covering a span of over 5000 years of settlement.

⁸ For example, Weni’s autobiography from Abydos (Lichtheim 1975: 21).

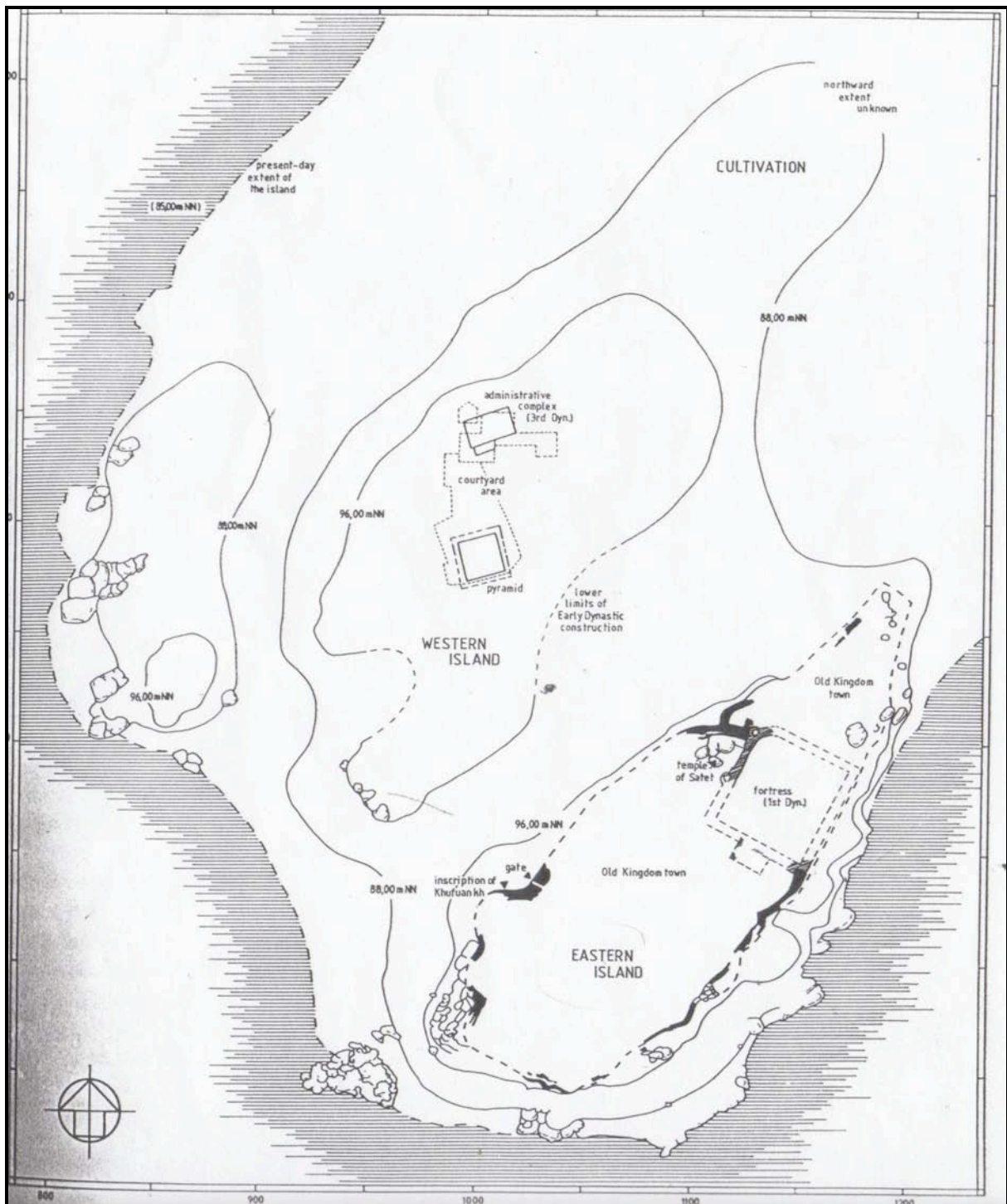


Figure 2.2. Elephantine: Old Kingdom walled settlement on eastern islet (after Seidlmayer 1996: fig. 1).

Systematic excavation has been carried out on Elephantine since 1969 by a combined German-Swiss expedition of the Deutsches Archäologisches Institut, Abteilung Kairo, and the

Schweizerisches Institut für Ägyptische Bauforschung und Altertumskunde in Kairo, led by Werner Kaiser, who was succeeded in 2009 by Stephan Seidlmayer. Excavation is on-going; findings are published by the Deutsches Archäologisches Institut in the series *Elephantine*, in the articles *Stadt und Tempel von Elephantine* featured in *Mitteilungen des deutschen archäologischen Instituts, Abteilung Kairo*, and in season reports accessible online at www.dainst.org.

Excavation of Elephantine's early history is fractured, the unusual topography of the island, the presence of the modern community with museum and garden grounds, and the abundance of antiquities of the Middle Kingdom through the Ptolemaic and Roman Periods naturally limiting the extent of horizontal exposure possible. Necessarily, selective excavations have been conducted around the standing monuments. We do know that in the Predynastic Period a Nagada IIc/d-phase village developed on the eastern islet (Kaiser et al. 1988: 141-144), in association with an imposing boulder-niche sanctuary dedicated to the cult of the goddess Satet, one of the triad of deities sacred to the First Cataract. In the 1st Dynasty the village community was overlaid by a state-imposed trapezoidal fortress with enclosure wall and semi-circular towers, roughly in the northeast part of the islet, wedged between the eastern granite ridge and the Satet sanctuary, and annexing the sanctuary's eastern (front) portion (see **fig. 2.2**) (op. cit: 139-141; Seidlmayer 1996: 112). The community, however, continued to develop (apparently) organically within, and beyond, the perimeter of the fortress. By the end of the 2nd Dynasty, the fortress had fallen out of use and the whole settlement—niche sanctuary and former fortress included—was enclosed within a massive oval town wall that appears to have encircled the eastern islet, generally conforming to the outline of the granite cliffs (Kaiser et al. 1998: 10; Kemp 2006: 197). The wall, accessed by a gate near the harbor in the southwest (the existence of

at least two additional gates is postulated), was repeatedly repaired and strengthened and consists of three to five “shells” of reinforcement, constituting a thickness of some 5 meters (Kaiser et al. 1988: 150-151). The settlement was thus ensconced in the trappings of a fortification (Ziermann 2003), although as will be seen below, its Old Kingdom architectural footprint (or, more accurately, what is known of it), in contrast to its later remains, appears substantially organic. It can be tentatively observed that local directives were not superseded by the state in the earlier period of Elephantine’s history (Seidlmayer 1996: 108-127).

Patches of Old Kingdom architecture dot virtually all regions of the eastern islet (northern, southern, eastern, and western), under and among the later antiquities and modern development. By the late Old Kingdom and early First Intermediate Period, expansion had occurred westward as well, spreading through the lowland wadi to the western islet (Ziermann 2003: 126-130). Houses in the 4th-dynasty site of Heit el-Ghurab at Giza being the focus of this study, a comparison here to contemporaneous domestic structures on Elephantine would be the ideal scholastic goal. However, the realities of degree of preservation and excavation of the island’s 4th-dynasty architecture limit our scope of comparison. Presented below, then, are examples of probable houses primarily of the Early Dynastic Period and earlier Old Kingdom, chosen for the extent to which they have been preserved, excavated, and represented in clear ground plans.

Directly east of the Satet niche (within the former fortress). Excavation within the former fortress revealed evidence of successive occupation from the Early Dynastic Period possibly through the 6th Dynasty. The area presents the remains of mudbrick probable houses, the best-preserved examples of which are grouped in the northwest corner of the fort and date to the late 1st-early 2nd Dynasty (Ziermann 1993). They are sub-rectangular (squarish), some having curved

exterior walls (Kaiser et al. 1987: 88-90). The structures are separated by narrow (0.5-1.0-meter-wide) lanes that impose only a limited degree of regularity, likely influenced by the rocky granite terrain. Although the orthogonal planning that was to develop on Elephantine in the Middle Kingdom and Second Intermediate Period contrasts with this early urban layout (von Pilgrim 1996), tentative indications of at least right-angled architecture are already present in areas outside the fortress grounds from the Late Predynastic Period, as will be shown below, and here within the fortress at levels dating probably to the 5th and 6th dynasties (Kaiser et al. 1980: 249-250 and fig. 2)—perhaps on ground that was more thoroughly leveled.

Most informative of the earlier (late 1st-early 2nd Dynasty) group is probable house “Building A” (**fig. 2.3**), a roughly square structure of approximately 7.0 x 7.0 m (excavation of its southeastern limits was truncated by the extent of the museum grounds), comprising at least five rooms (designated “IXa,” “IXb,” “X,” “XIII,” and “XIV”; a possible room “XII” is ill-defined) and a “rear” court (*Hof*) in the northwest, abutting the curved fortress wall. The rare presence of fallen charred roof-beams, along with approximately 160 intact ceramic vessels, help date the dwelling and indicate its hasty abandonment, possibly because of fire (Kaiser 1987: 88). The house is free-standing, surrounded on three sides (northeast, west, and southeast) by irregular narrow lanes bordered by structures apparently similar but exhibiting a lesser degree of preservation; our understanding of the surrounding context is further hampered by the encroachment of the museum garden grounds on the east. Room size displays little variation: three (and possibly four) squarish rooms of roughly 4.0 x 4.0 m are bordered on the southwest by two much smaller chambers (“IXa” and “IXb”). The entrance of the house is located in the southernmost smaller chamber, “IXa,” which appears to be a vestibule. Is it noteworthy that in its earliest phase the vestibule contained a “dog-legged” opening (that is, an off-axis entrance,

Directly north of the Satet niche: A walkthrough of House A in its earliest phase.

Excavation here revealed additional settlement remains constructed upon, and expanding north of, the collapsed walls of the former fortress. Ceramics and jar sealings date these structures to the late 2nd-early 3rd Dynasty; evidence from the 4th and 5th dynasties occurs in this region only as debris (Kaiser et al. 1987: 88-89). Like the area directly east of the Satet niche, this northward expansion features a similar apparently organic layout of irregular multiple-roomed mudbrick houses linked by narrow lanes. At least one of these structures, “House A,” however, contained a silo, exterior courtyard, and possible animal stalls (Kaiser et al. 1987: fig. 6). It is additionally exceptional for the evidence it presents of change over time.

House A is situated within a corner where the path of the massive town wall turns from north to northeast (**fig. 2.4**). In its earliest phase, dating to the second half of Dynasty Two, the internal core of the house comprised five rooms and measured 4.7 m north-south by 6.4 m east-west, totaling 31 m². A distinctly rounded courtyard fronted the house on the north. The northeastern wall of the house itself displayed a similar rounding. (As a later phase of the house will show, the rounded architecture was not a consequence of the property’s “wedged” position within the bend in the town wall: see **fig. 2.5**) A squarish open court and two possible animal stalls were attached to the dwelling’s west side. With courts and stalls included, the dwelling occupied a total of 75 m² (Ziermann 2003: 85-90 and figs. 29, 30).

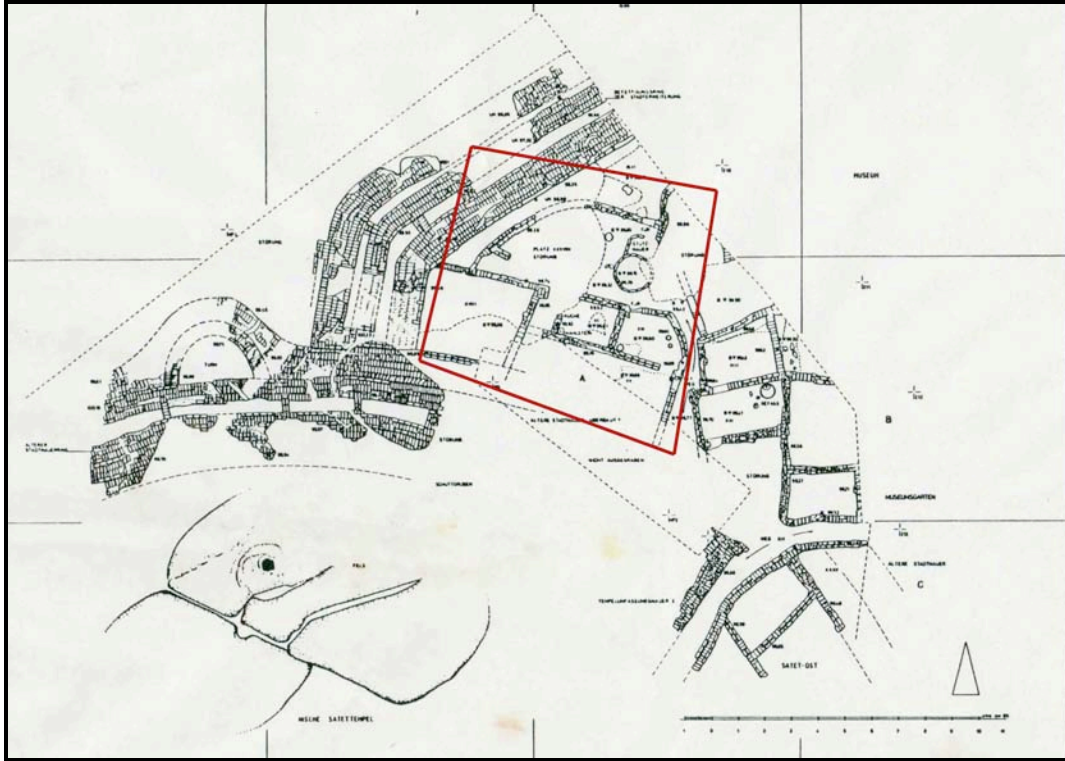


Figure 2.4. Directly north of the Satet niche: House A in the second half of the 2nd Dynasty (after Kaiser et al. 1987: Figure 6).

The house core possessed two entrances, both on the north (**fig. 2.5**). The westernmost of these appears to have accessed a transitional space, a vestibule (1.1 m²), leading straight through to a long, rectangular room, the *Hauptraum*, the largest space and probably the main living area, of 13.6 m². The vestibule does not present a “dog-legged” trajectory of access. Although technically the view from the western entrance is uninterrupted, the line of site exposes only a minimum of the main room’s western portion. That the privacy of the room’s occupants was supported becomes especially significant in light of very tentative evidence for a possible sleeping niche at the far (east) end of the room. Here a low, half-brick partition may have defined a niche whose dimensions of approximately 0.7 x 2.30 m would qualify it as a sleeping area, although it was not specifically identified as such (Ziermann 2003: 87 and fig. 30). The vestibule also transits, to the immediate east, into an apparent kitchen with millstone and sunken ceramic hearth.

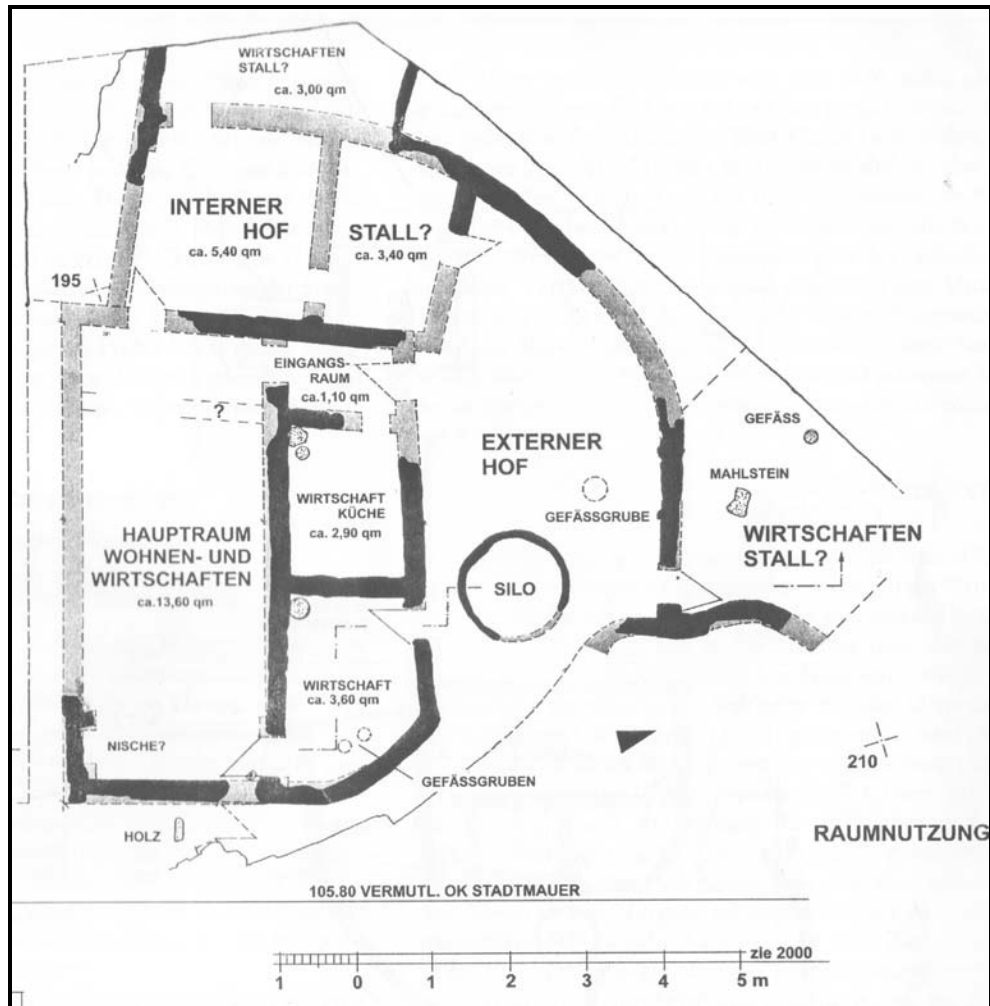


Figure 2.5. Ground plan of House A in the second half of the 2nd Dynasty (after Ziermann 2003: Figure 30).

The second (easternmost) entrance to the house opened into a posited workplace (industrial space). It was this room that presented the aforementioned rounded northeast wall—an apparent conformity to the houses’s rounded forecourt (see **fig. 2.5**). The workplace opened in the southeast to the main room (Ziermann 2003: 85-90 and figs. 29-30).

The squarish open court on the west side of the house had possible animal stalls attached on the north and west. The northernmost stall opened on the house’s forecourt. The adjacent open court to the south had three points of access: into the stall to its north, into the house’s main room to the east, and into the second stall on its west (Ziermann 2003: 85-90 and figs. 29, 30).

House A's rounded forecourt was entered through an opening in the northeast. At this opening were scant remains of what appears to have been a linear northern extension of the court's wall, suggesting that the property continued further north in some capacity. The question of what lay beyond remains open (buried under the museum grounds), although the excavators have postulated an animal stall and/or industrial area. Moreover, it also appears that the eastern wall of the forecourt extended southward, constituting part of a small lane (*Weg*) running along the dwelling's east side (see **fig. 2.4**). More clarification is needed of the trajectory of this path and its relationship to House A and the surrounding context. Interestingly, a circular silo was positioned in the forecourt directly within the line of sight, and access, between the forecourt's opening to the northern exterior and to the workroom on its south. It would appear that the security of the silo was not a concern (compare, for example, the discussions below of the silos at the Khentkawes complex in Giza, and in the Eastern Town House at Heit el-Ghurab; see also Appendix for discussions of silos in Egypt's traditional houses today). However, if the property did in fact extend further to the north, perhaps encompassing additional gated animal enclosures or industrial areas, the location of the silo may prove to have been relatively, if not highly, secure. The presence of the *Weg* running along the east side of the house must necessarily obfuscate the question of the silo's security until further archaeological investigation enhances our understanding.

House A exhibits in its earlier phase (second half of 2nd Dynasty) a nearly circular, "distributed" (Hillier and Hanson 1984: 14) flow of access, allowing most of its rooms to be accessed from almost any other room, as illustrated in the flow diagram below (**fig. 2.6**). The kitchen and the farthest (possible) stall are the only spaces through which one must leave the same way one enters. If the occupants were engaged in household industry(ies) of some kind, the

demands of those activities would certainly have benefited from a high degree of access distribution (e.g., the retrieving of tools, the hauling of raw materials, the removal of debris). Considerable variation in room size is also apparent in the house's core (in generalized terms: small vestibule, large main room, and fairly large interior court, with intermediary rooms of roughly similar size), in contrast to, for example, the homogeneity displayed in the aforementioned dwelling of the late 1st-early 2nd Dynasty within the former fortress.

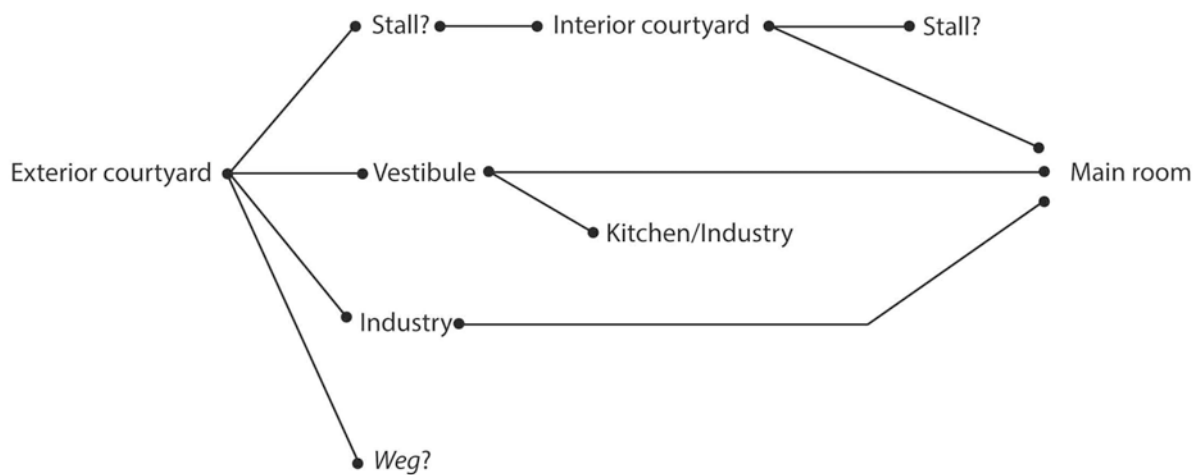


Figure 2.6. Flow diagram: House A in its earliest phase (second half of 2nd Dynasty)(by author).

The metamorphosis of House A: A walkthrough of its later phase. Excavation revealed that in the first half of the 3rd Dynasty, House A was fundamentally changed with respect to both form and function. Most conspicuously, its size was virtually doubled from its former 75 m² to 152 m²; its walls were straightened; the two points of external access to the house core were reduced to one; new rooms were added while original rooms were reconfigured; and the addition of a staircase on the east, together with a thickening of walls at the rear (south), indicate that a second story of 20 m² was added to the southern portion of the house core, creating a tiered

structure (**fig. 2.7**; the total square footage above includes the newly added second story)
 (Ziermann 2003: 87 and reconstructions displayed in figs. 31 and 32).

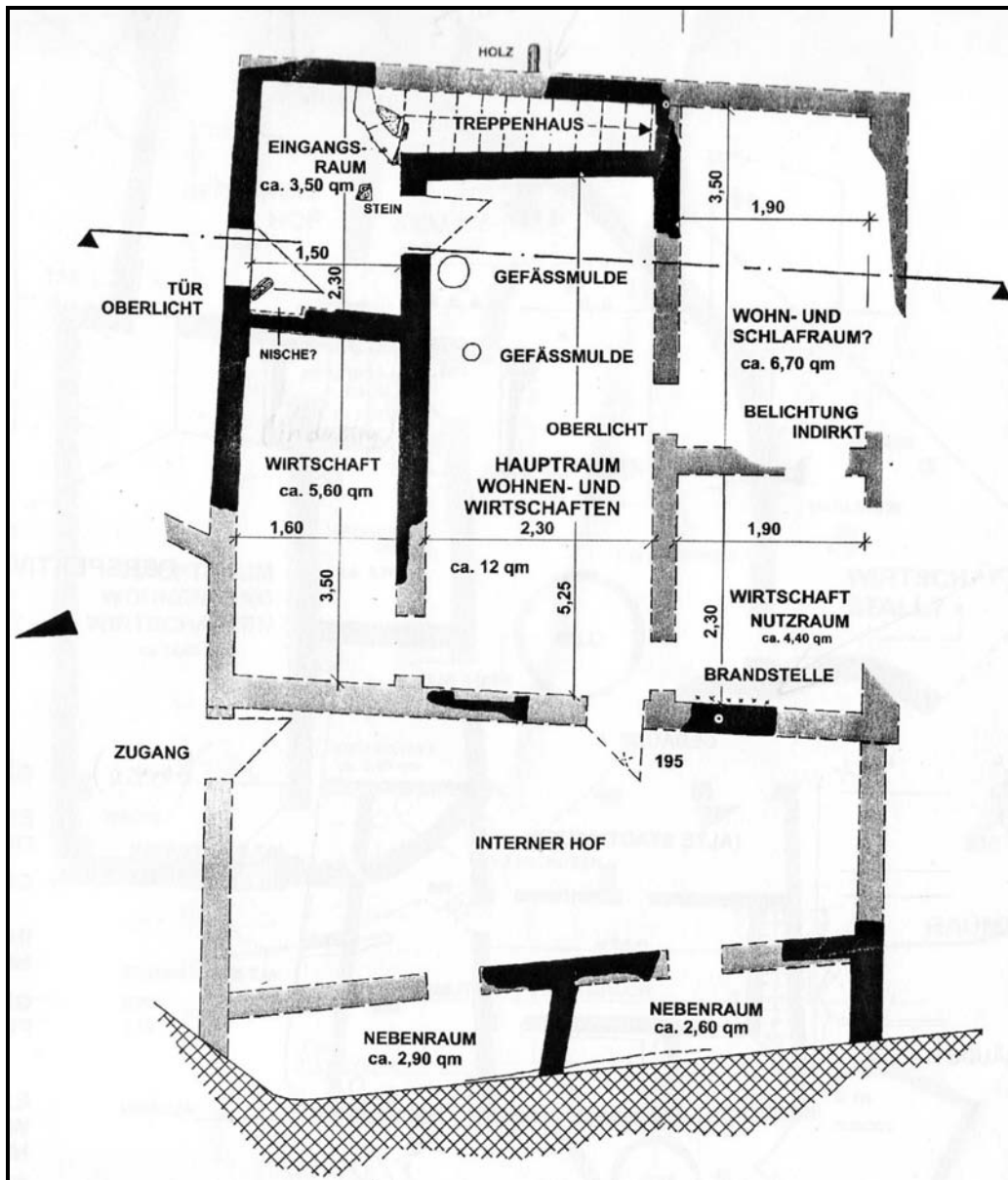


Figure 2.7. Ground plan of House A in the first half of the 3rd Dynasty (after Ziermann 2003: Figure 32).

Significantly, the house's former main (west) entrance, accessing the vestibule, was blocked off in favor of the eastern entrance into what had been a workroom. This workroom now took on the function of the vestibule, transitioning between the house's exterior and the main

room within, and additionally providing access to the new second floor via the staircase. The new vestibule, like the former one, did not present an obvious dog-legged trajectory (the flow of access from the entrance shifted only slightly off-axis to the *Hauptroom* beyond). Nevertheless privacy was preserved, for as shown below, private quarters appear to have been relocated deeper within the house.

The house's main room (*Hauptroom*) was slightly reduced in size to 12 m² (down from 13.6 m²), while an additional two rooms were added behind it (that is, directly to the south) (see **fig. 2.7**). The walls of the new southern expansion were one and a half bricks thick, in contrast to the single-brick thickness of the house's earlier-stage walls, evidently in order to support the new second story. The absence of finds renders it difficult to estimate the functions of the two newly added spaces, although it was posited that the easternmost was a living/sleeping area, while the westernmost was utilitarian (Ziermann 2003: 87-88). It may be relevant that the easternmost space was located in the farthest recess of the house and that, moreover, the access into this space was positioned off-axis from the vestibule, preserving the privacy of the occupants. Such considerations would certainly lend support to the function of the space as a bedroom (and of course further sleeping space may have been provided by the second story). The main room, now lacking its eastern niche, displayed two robbed pot emplacements, perhaps indicating that it had been given the function(s) of the former cooking area, which, as will be shown below, was considerably altered.

It appears that when the house's former (western) entrance was blocked off and the vestibule reassigned, the wall separating the (former) vestibule from the neighboring cooking area was removed, significantly enlarging the space. Evidence of food-preparation-related installations was no longer evident, however, and the excavators have assigned the space an

industrial function (Ziermann 2003: 87). Cooking activities, as we have seen, may have been transferred to the main room.

The house's western court with attached animal stalls underwent a comprehensive transformation, the two stalls having been subsumed by an enlarged, straight-walled, if subrectangular, un-roofed court (increased to 25 m² from its former 15 m²), with two narrow utility rooms directly to the west, abutting, and using the structural support of, the town wall (see **fig. 2.7**). In front of the house the silo remained in its former position, though the rounded wall of the forecourt was no longer present. Rather, it seems to have been replaced on the west by use of the town wall itself. A dividing wall was erected (not shown in **fig. 2.7**), angled in conformance to the eastward-turning town wall, separating the forecourt into two courts, eastern and western. What may have bounded the forecourt on the east, along with the easterly *Weg*, needs further understanding.

The proximity of House A to the cultivable lowlands to the west placed it in a possible farmstead area (Ziermann 2003: 88, 128-130, and **fig. 47**). In this context, the rounded early forecourt may perhaps be seen as a corral (see Redding's discussion [2011] of rounded corrals, including a possible example found at Heit el-Ghurab). The excavators designated the structure a farmhouse (Ziermann 2003: 88 and **figs. 29, 30**). Since the western half of the straightened later forecourt led directly off the house's newly enlarged interior court, while the eastern half, containing the silo, led off the new main entrance, it is possible that the new design reflected an improved strategy of keeping the animals' space separate from the human occupation zone.

While we cannot know what configurations of space constituted the house's second story, preliminary conclusions can be drawn from analysis of the ground floor alone in the earlier and later phases of House A. That the number of accesses to the exterior was reduced from three to

two exhibits an increased degree of control over the household space, and by implication, the increased security of the household. As the diagram below reveals (**fig. 2.8**), the flow of access became less distributed in the house's later phase. At least three, and possibly five, spaces are virtual "dead ends," where one must leave the same way one enters (the former kitchen and the two utility rooms; definition of the walls may confirm the newly added bedroom and industrial room, as well).

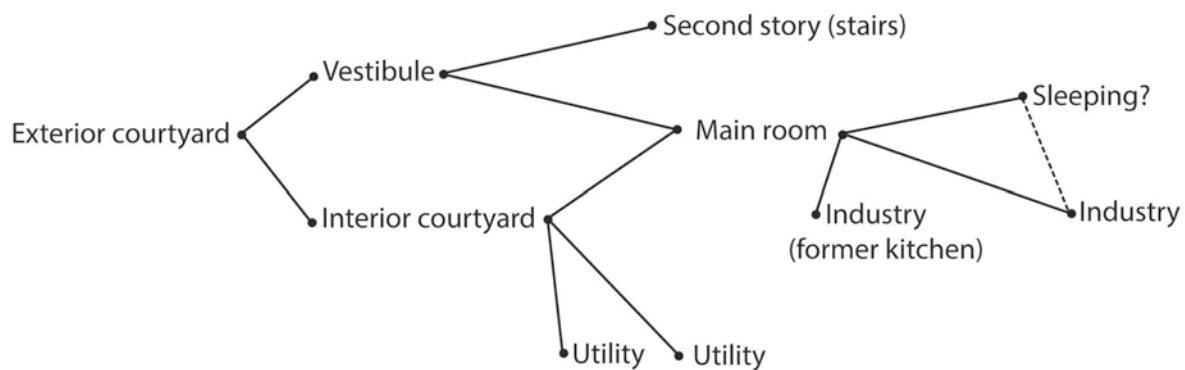


Figure 2.8. Flow diagram of House A in its later phase (first half of 3rd Dynasty)(by author).

The main room, containing the highest number of accesses in the house's core in both its earlier and later phases (three and five, respectively), appears to have been the "hub" of the house. The number of spaces in the house increased over time: one additional room was added on the ground floor, increasing the total from four to five, not including the unknown territory of the second story.

The functions of the spaces in House A, as far as we can estimate them, exhibited an increased degree of separation over time. The space occupied by the newer vestibule, for example, appears to be dedicated to that function, no longer doubling as a workroom. Similarly the (possible) newer bedroom occupies, as noted, the farthest, most private recess of the house, while the functions of the forecourt (whatever they may have been) were divided in the later

phase between those associated with the internal court and those associated with the house's core.

Ricke's (1932: 25-42) tripartite plan applies neatly to House A, underscoring its characterization as a domestic house. At both phases of occupation its ground plans displayed a vestibule (though its location changed); a relatively private space for sleeping (though its location also changed); and a plethora of work/activity-related spaces, some of which were open courts.

Directly west of the Satet niche. An area directly west of the Satet niche shows fragmentary 6th-dynasty remains tentatively characterized as residential: circular granaries, courtyards with thin un-plastered walls, and possible houses with thin plastered walls (Kopp 2007: 5).

Southeast of the former fortress (Oststadt): The transformation of building "A". Directly south of (abutting) the southeast corner of the former fortress lay an area of possible domestic settlement, designated by the excavators as *Oststadt* (East Town). The buildings in this area face an apparent street that runs southeast-northwest, perpendicular to the curved town wall. There is no obvious indication of a rigid, orthogonal layout; it is difficult, however, to apply a meaningful characterization without greater context. A few of the structures here were exceptionally well preserved, displaying plastered mudbrick walls of up to two meters in height (Kaiser et al. 1987). One structure, "A," is particularly revealing not only for its unusually high state of preservation but for its size, features, and modifications of form and function (**fig. 2.9**).

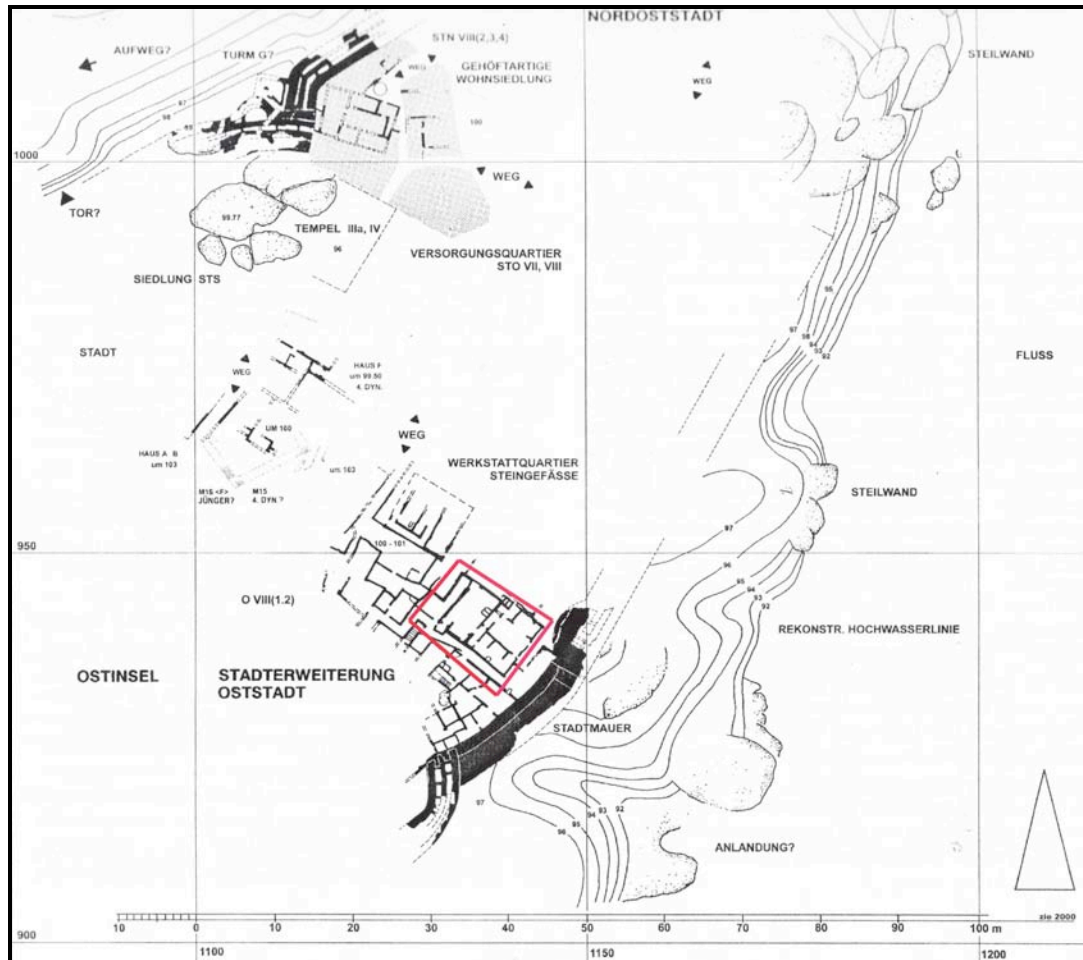


Figure 2.9. Structure A's location in East Town (Oststadt), southeast of the former fortress (after Ziermann 2003: fig. 48).

Structure A, in its earliest phase, is dated to the first half of the 3rd Dynasty from jar sealings of Djoser found in one of its rooms (Kaiser et al. 1987: 94). It was a large, one-storied rectangular building, measuring approximately 8.0 x 11 m (88 m²)⁹ (fig. 2.10)¹⁰. Its single entrance, positioned in the southwest corner and giving onto the street, accessed a long, narrow corridor—an elongated vestibule—that spanned the width of the building. The vestibule in turn

⁹ Measurements calculated from published scale drawing.

¹⁰ Ziermann (2003) lists the structures in his Figures 34.4-34.6 as belonging to the priests' settlement of Menkawre at Giza. They are in fact part of the Khentkawes's Giza complex, currently under excavation by AERA and discussed below in section 2.3 of this chapter.

transitioned at its north end to a wider rectangular space distinguished by a pilastered niche, painted with vertical red stripes, at the opposite (south) end (see **fig. 2.10**), constituting an accentuated *chicane* (dog-legged access) (Kaiser et al. 1987).

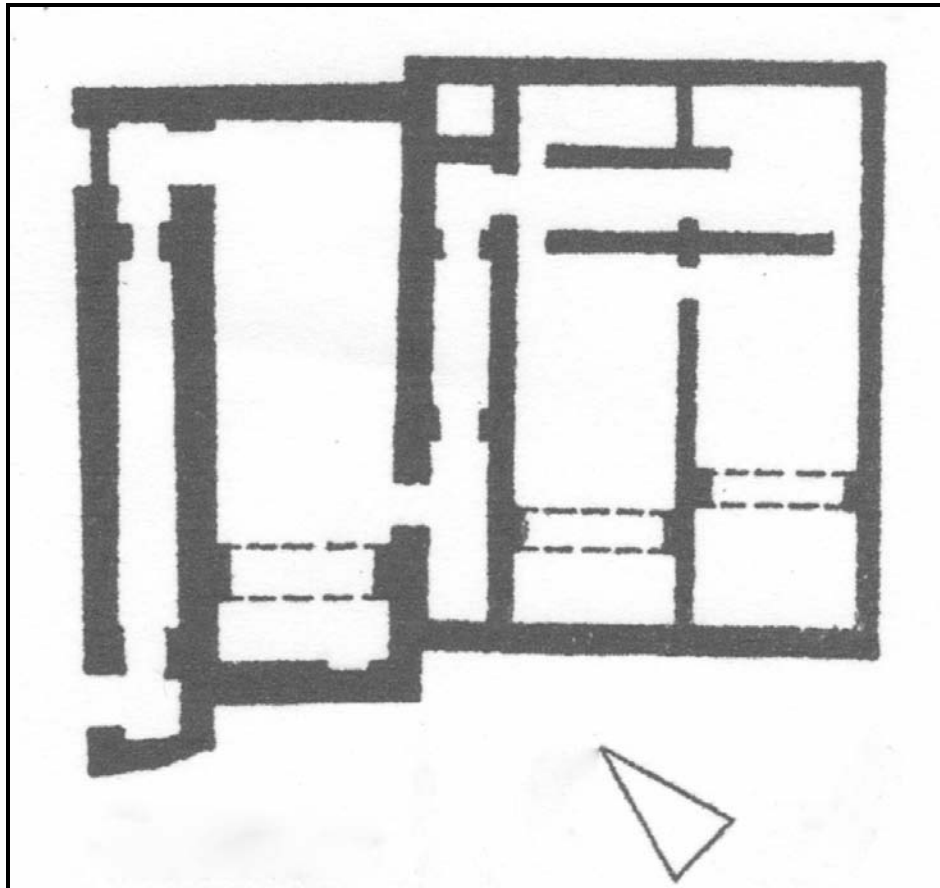


Figure 2.10. Structure "A" in the first half of the 3rd Dynasty (after Ziermann 2003: Figure 34.3).

If the pilastered niche can be taken as an official's formal seating area for "receiving," the room in which it was located was virtually a reception hall. Access further into the building from this possible hall was significantly located at the niched area (the south end), creating a screening zone for anyone passing through to the second narrow, elongated transitional space to the east. This corridor led further eastward, via another *chicane*, to two additional pilastered halls. If we can assume that formal seating areas existed in these niches as well, it would further emphasize the official rather than domestic character of the structure, underscored by the absence of

household debris found during excavation (Ziermann 2003: 90; Kaiser et al. 1987: 94). Arnold’s esoteric analysis (1998: 6-8) of the organization of space as displayed in the ground plan of the Middle Kingdom *Priesterhaus* at Dahshur may (tentatively) apply here: structure A appears to be based on the concept of “space as an abstract whole”—that is, space organized by walls that are independent elements, creating rooms lacking a clear correspondence to function (as opposed to space in which the rooms are independent elements assembled as a whole, one room being connected to the other while not influencing the attributes of the other).

Indeed the excavators assessed that in the first half of the 3rd Dynasty, structure A functioned as an administrative building (Ziermann 2003: 90). Interestingly, the two eastern halls were footed at their north end by an area of apparent “synchronized” space (Hillier and Hanson 1984: 182), where more than one person could be present at the same time. This space may have functioned as a (typically bureaucratic) waiting area, set off as it was by a partition (see **fig. 2.10**). The flow diagram below (**fig. 2.11**) expresses in its almost entirely linear trajectory the building’s mostly “non-distributed” (Hillier and Hanson 1984:14) flow of access—a pattern allowing a single access in or out of a space. A high degree of control is implied, as one would expect of an official building.



Figure 2.11. Flow diagram of structure “A” in the first half of the 3rd Dynasty (by author).

Excavation showed that in the later 3rd Dynasty to possibly the early 4th Dynasty, structure A’s identity shifted. In this later phase the size of the building remained virtually the

same. However, the two eastern niched halls were replaced by a possible core area, composed of four rectangular spaces of varied size; a larger space on the south, semi-divided with two permeable partition walls, featured a hearth (**fig. 2.12**).

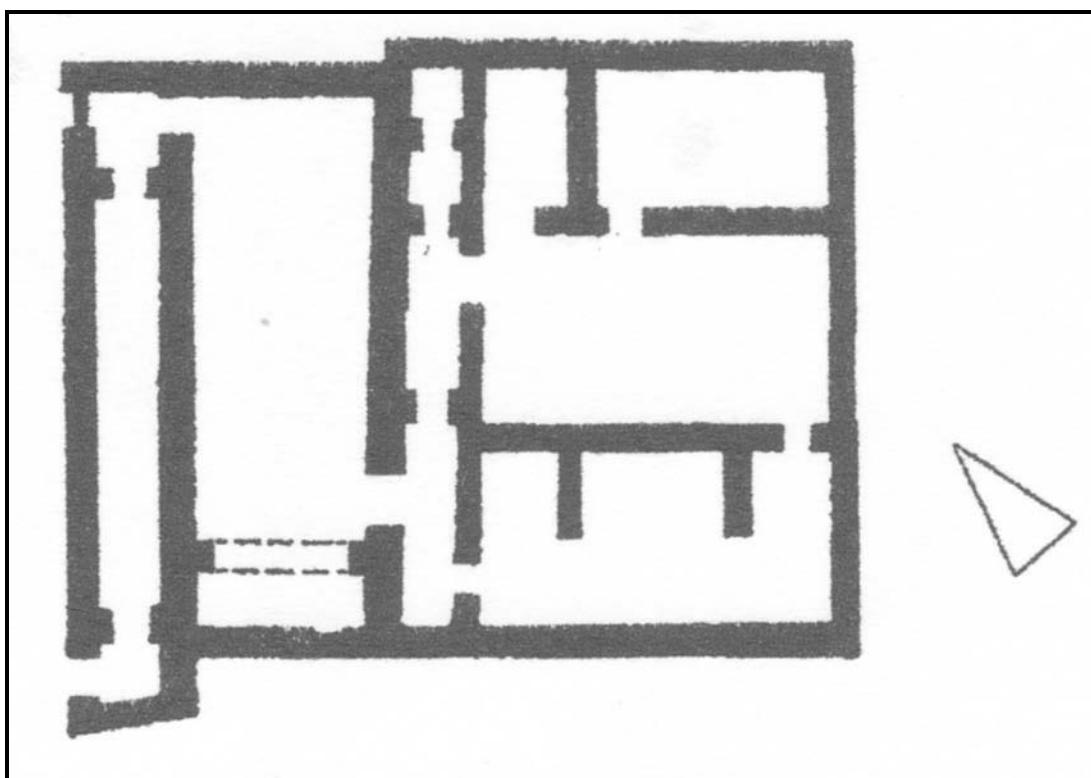


Figure 2.12. Structure “A” in the second half of the 3rd Dynasty to early 4th Dynasty (after Ziermann 2003: Figure 34.2).

Hammerstones, polishing stones, drills, and piles of limestone and sandstone debris were uncovered both within the structure and in the adjacent street, suggesting that intensive stone-working was carried on in this modified structure (Kaiser et al 1987: 94). Interestingly, the westernmost of the three originally niched halls remained. The building now had features that could be characterized as domestic (a possible core area with hearth) concomitant with the “official” sequence of an elongated vestibule and formal niched receiving hall. The building, at this later phase, was categorized as the house of a chief supervisor (Ziermann 2003: 90). The diagram below (**fig. 2.13**) illustrates that in essentially half the structure the flow of access was

non-distributed (and therefore highly controlled) while in the other half the flow of access was substantially distributed. This would support characterization of the structure, at this later stage, as a place of both habitation and administrative work—possibly the official supervision of stonework of some kind. Moreover, the dwelling in its modified form could possibly be conceptualized as a tripartite house, comprising an entrance vestibule (if exaggerated); relatively secluded spaces in the northeast corner that could have been used for sleeping; and spaces where daily-life activities could have been performed, including a (niced) hall that may have functioned as a kind of “home office,” and spaces (possibly those in the southeast) for the stone-working whose evidence was recovered from the premises.

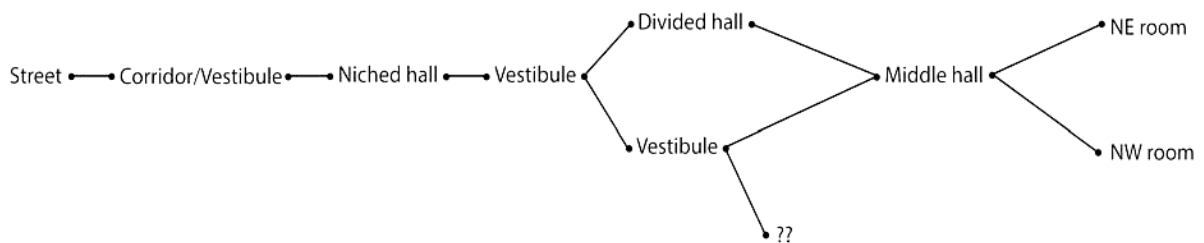


Figure 2.13. Flow diagram: Structure “A” in the second half of the 3rd to early 4th Dynasty (by author).

The explanation for structure A’s transformation from an administrative building to a domestic and administrative one is not known, though it may be pondered whether, in the late 3rd Dynasty, Elephantine’s stonework-related resources, and associated personnel, were called upon in support of state construction projects, such as that of Huni’s cenotaph pyramid on the western islet or, in the early 4th Dynasty, that of the Memphite pyramids. Analysis of its earlier phase is instructive for highlighting characteristics that are recognizably non-domestic.

Harbor area. Four, and possibly five, mudbrick houses of the late 6th Dynasty have been identified in the area of the southern harbor that existed between the western and eastern islets

(Raue 2005). The houses are situated on both sides of a well-defined north-south street that appears to link the harbor with the town gate. Two of the dwellings acquired limestone thresholds in their latest phases. No remains of earlier dynasties were found (Raue 2004).

Discussion. Although Elephantine was a fortified settlement, this brief selection of ground plans does not advance our ability to characterize whether the Old Kingdom domestic architecture on the island reflected its identity as a “purposed” community (or indeed as a cult center or nome capital). The fragmentary evidence we do have suggests an absence of rigid state authority, perhaps supporting Kemp’s interpretation (drawing upon Seidlmayer [1996]) of the settlement as “an interaction between royal initiatives and local community interests” (Kemp 2006: 197). It is also possible, of course, that evidence of state planning (barracks?) does exist on the islet, buried beneath later-phase constructions.

Lacking a broader sampling, we can at least affirm that the two contrasting structures “House A” and “Structure A” (in its second incarnation) both reflect Ricke’s tripartite plan (1932: 25-42). The small Early-Dynastic “Building A” may also prove to be tripartite if the complete structure were accessible for study. The ground plan of the excavated remains displays a uniformity of room size, perceptible also at Hierakonpolis as noted above (Quibell and Green 1902), which may be characteristic of the earlier Old Kingdom. The above exploration of Elephantine shows, perhaps above all, how instructive a ground plan is to an accurate understanding, and identification, of domestic architecture.

2.2 Abydos (North)

The site of Abydos is located on the Nile’s west bank, adjacent to the modern village of Beni Mansour in the Upper Egyptian province of Sohag (see **fig. 2.1**). It is situated on the desert edge, where the alluvium meets the low desert. Anciently it was part of the eighth Upper

Egyptian, or “Thinite,” nome (Brovarski *LÄ*: column 475). Greater Abydos, which encompasses a north, middle, and south section, totals approximately eight square kilometers. Its archaeological ruins date from the Predynastic Period (Naqada I) through the Ptolemaic and Roman Periods, virtually spanning the spectrum of Egypt’s ancient history and presenting a potent and complex constellation of temples built and rebuilt, cemeteries, cenotaphs, enclosure walls, and an ancient town (Adams 1998). The principal deity of early Abydos was Khenty-amentiu, “Foremost of the Westerners.” In the later Old Kingdom this mortuary god became identified with Osiris (Baines and Malek 2000: p. 114), catalyzing Abydos’s development into a pilgrimage- and cult-center of national importance (O’Connor 2009: 71; Kemp 1977: 186).

During the early and mid-nineteenth century Abydos suffered intensive exploitation at the hands of the early collectors, d’Athanasia and Anastasi, and of the French archaeologist Auguste Mariette, who provided illustrations of some of the objects he extracted, but no provenience records¹¹ (Simpson 1974: 5-6). For three seasons at the close of the nineteenth century the French Coptic scholar Émile Amélineau conducted pseudo-archaeological operations at the Archaic Period cemetery of Umm el-Qab, until his concession was taken over in 1900 by W. M. Flinders Petrie of the Egypt Exploration Society. With Petrie began the first scientific excavation of Abydos (published in two volumes, *Abydos I* and *Abydos II*), carried on by his successors of the Society in the early twentieth century, the joint University of Pennsylvania-Yale expeditions from 1969, and the German Archaeological Institute in Cairo in 1977 (Kemp 1982).

¹¹ Auguste Mariette, *Abydos: Description des Fouilles Exécutées sur l’Emplacement de Cette Ville* (2 volumes, Paris, 1869 and 1880); *Catalogue Générale des Monuments d’Abydos Découverts Pendant les Fouilles de Cette Ville* (Paris, 1880).

David O'Connor carried out limited test excavations in 1979 in the southern part of Abydos North that produced well-preserved domestic remains dating to the Old Kingdom (Adams 1998). In 1991, the joint University of Pennsylvania Museum-Yale University Expedition to Abydos, co-directed by O'Connor and William Kelly Simpson, launched the Abydos Settlement Site Project with Matthew Adams as field director. Today Adams directs the project in association with New York University's Institute of Fine Arts (*ibid.*).

Petrie wrote in his early publication *Abydos I* (1902: 9) that before the 1st Dynasty a town had sprung up around the temple at Abydos (i.e., the temple of Khenty-amentiu, later Osiris-Khenty-amentiu). He considered the temple to have been located in the west-central part of the site, among a complex of cult structures. His excavations west and southwest of that cult area revealed house walls “a couple of feet or so in height,” dating from the late Predynastic Period (Naqada III) to the 2nd Dynasty (Petrie 1902: 10; Adams 1999: 108) (**fig. 2.14**). Petrie did not find it practical to draw plans of these dwellings, which were eventually lost to the *sabbakhiin*¹² (diggers of nutrient-rich soil for fertilizer) (Adams 1999: 108). Today it is debated whether the temple may actually lie directly southeast of the cult structures (e.g., O'Connor 2009 *contra* Kemp 1968); meanwhile excavation has increased the known extent of the town.

¹² The literary Arabic word *sibaakh* means “dung” or “manure” (Wehr 1976: 393). The term *sabbakhiin* is used colloquially to connote those who dig for any type of nutrient-rich soil for use as fertilizer, whether the soil is, for example, rich Nile alluvium, or derived from ancient mudbrick, which is high in organic content. Also see Kemp (1977: 187).

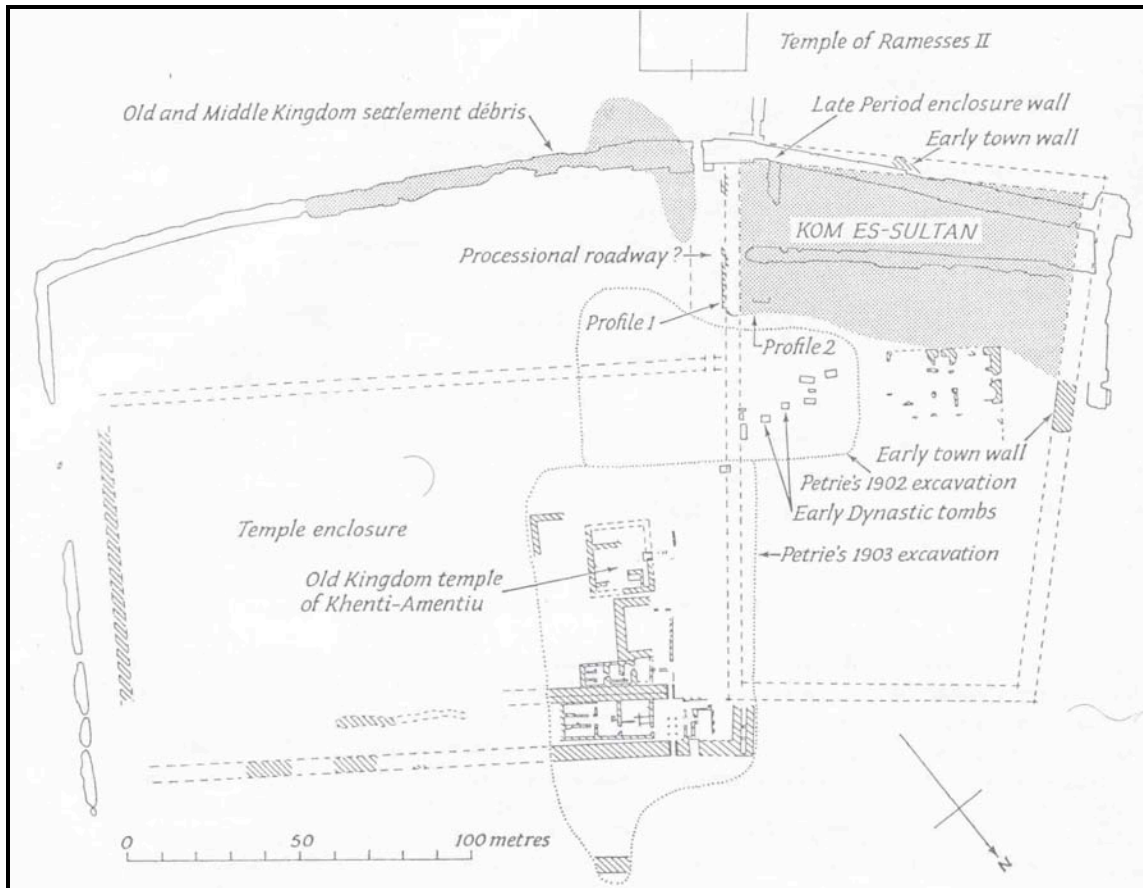


Figure 2.14. North Abydos showing Petrie's excavation areas (after Kemp 1977: fig. 1).

An area enclosed by Late-Period walls (Kemp 1977: 187), known as the Kom el-Sultan, has preserved a stratigraphic sequence displaying that North Abydos constituted a substantial *tell* (town mound) of some 12 meters in height, represented by Predynastic- through Roman-Period levels (O'Connor 2009: 80). The less protected area outside of Kom el-Sultan has been significantly peeled away by *sabbakhiin* and thus presents earlier strata, from the First Intermediate Period back through the Old Kingdom and prior (ibid.).

In David O'Connor's 1979 test-trenching in the southeastern region of the *tell*, he located the edge (specifically, the southwest corner) of a mudbrick building, which, judging from the one-meter thickness of its wall, was of some importance. The northeastern extension of the building lies beneath the village of Beni Mansour (Adams 1998: 21-22). Because artifacts of a

domestic character were found within the structure it was deemed an elite house, possibly belonging to the high priest of the Abydene cult of Khenty-amentiu (O'Connor 2009: 85). The house dates to the late Old Kingdom and First Intermediate Period, although stratigraphy indicated that its original construction was earlier, possibly in the mid-Old Kingdom (Adams 1998: 22, 26).

It was the area wrapping around the exterior of the house's southwest corner that comprised the substantial 1000-m² exposure excavated by field director Matthew Adams for the University of Pennsylvania Museum-Yale University Expedition to Abydos in 1991 (**fig. 2.15**). Here Adams found a group of apparent mudbrick houses, arranged on opposite sides of a narrow, northwest-southeast-running lane, or alley. The houses on the eastern side of the lane shared walls and were constructed abutting the large elite dwelling. Evidence showed that one side of the lane had been bordered anciently by a "fence" of plant stalks, a construction device seen in Egyptian villages today (Adams 1998: 25). Nine houses were identified, of which three were considered complete (O'Connor 2009: 83). Their abundant ceramic assemblage and their contiguity with the elite house date them to the late Old Kingdom and First Intermediate Period. The earlier stratum revealed in the test-trenching of 1979, however, featured architecture with thinner walls, constructed according to a different orientation, dating to the middle of the Old Kingdom [Adams 1998: 21, 26]. Moreover, Adams explained that in various spots around the site where the depredations of the *sabbakhiin* were less severe, a later level dating to the Middle Kingdom is also present (Adams 1998: 25). The archaeological record clearly testifies to the town's longevity.

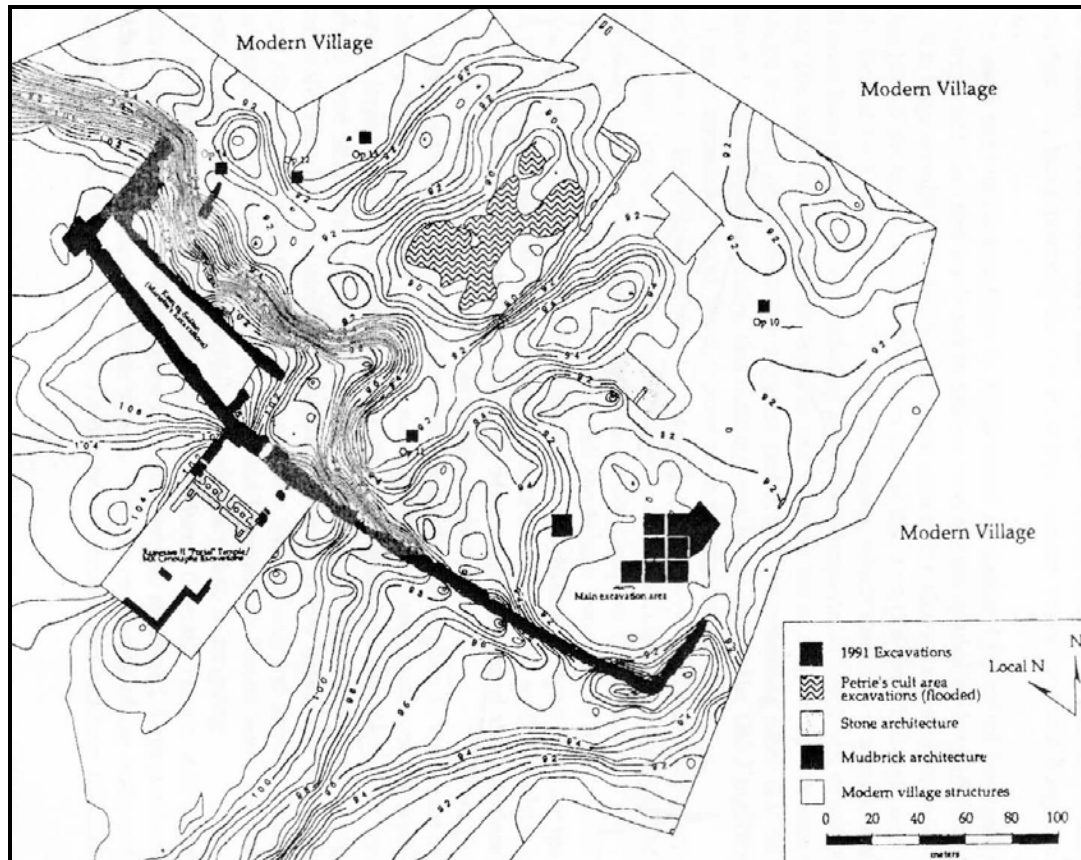


Figure 2.15. Location of 1991 Abydos Settlement Site Project excavation (after Adams 1999: fig. 5).

While individual ground plans have regrettably not been published, the general plan of the 1991 exposure (**fig. 2.16**) displays the basic layout of the houses excavated. (Buildings “2,” “3,” and “5” appear the most complete; “Building 1” designates the thick-walled elite house.) It appears that all the houses share walls except for Building 5, which stands alone on the opposite (west) side of the lane. The smallest house (not identified on plan) is affirmed to be 89 m². Average measurements for groupings of larger houses have been provided (O’Connor 2009: 84), the largest average being 190 m² and the next largest, 160 m². Even this generalized size range would indicate social stratification within the community. The presence of child burials in simple pits under the floors of a number of the houses (Adams 1998: 25) confirms that the community was at least in part composed of families of non-elite status.

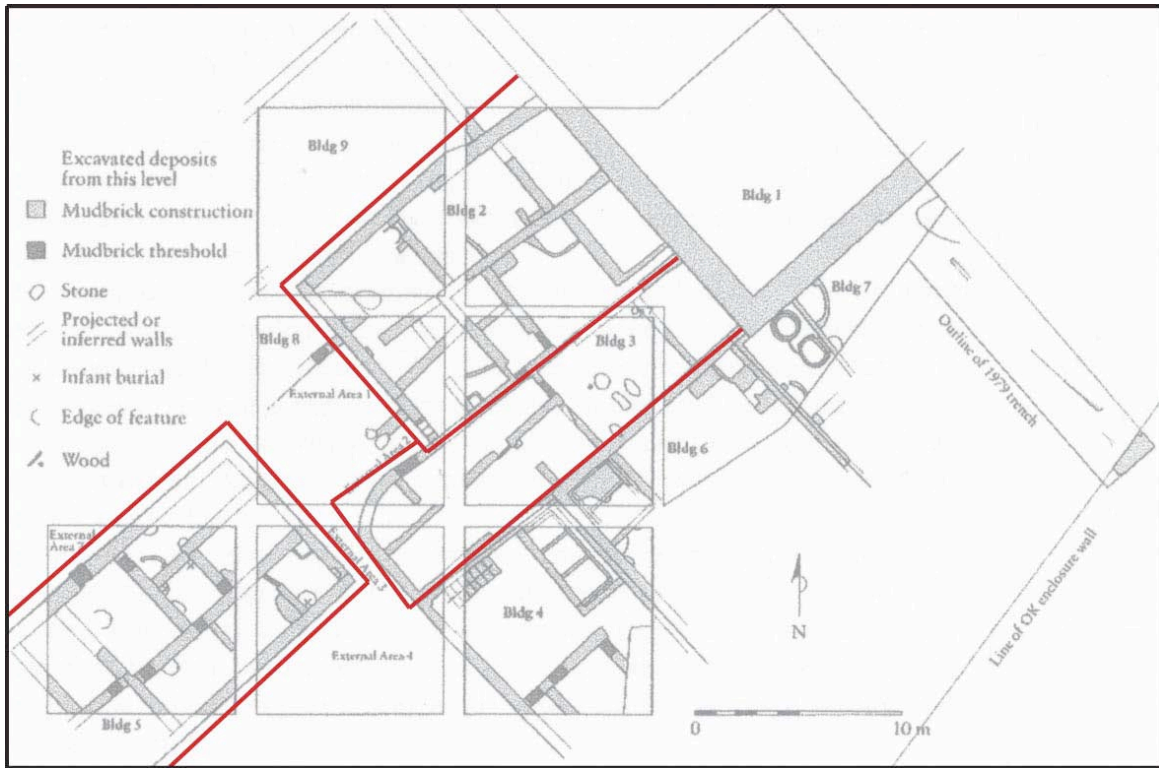


Figure 2.16. Main excavation area of 1991 with probable houses outlined (after O'Connor 2009: fig. 39).

Each house possesses a single entrance and multiple rooms; some have a rear court (Adams 1998: 22). There appears to be considerable variation in the size and configuration of rooms and in the overall shape of the structures. Tentatively, buildings “2” and “5” appear rectangular, while building “3” is narrow and rectilinear (see **fig. 2.16**). Such variety would suggest that the settlement was not overly “directed” by the central authorities. At the same time, without a broader exposure of the community’s layout—including, for example, the trajectory of the lane or alley, and whether the lane intersects at right angles (or not) with other avenues effectively separating regular “blocks” of houses, such as the examples found at the site of Heit el-Ghurab at Giza, discussed in Chapter 3—it would be premature to apply to it an organic character.

Buildings “3” and “4” had evidently been destroyed by fire during the First Intermediate Period. Perhaps ironically, the burning resulted in an abundance of charred but well-preserved material culture. Burnt roof fragments, for example, showed the mud-covered reed matting used in the roof’s construction (Adams 1998: 24; see Appendix for similar roofing found today in traditional Egyptian houses). Fragments of wooden furniture were also preserved, along with ceramic vessels containing flax seeds and figs still in situ.

Some of the houses featured hearths, baking ovens, brick-lined storage pits, and circular silos. An unusually large silo, associated with an Old Kingdom stratum, was constructed with double walls. Sand filled the spaces between the walls, perhaps as a desiccant for the grain stored within or as a deterrent to pests (Adams 1998: 25-26). O’Connor considers that the household responsible for this large silo may have supplied grain in an administrative capacity within the community (2009: 84).

Cut into the floors of buildings “2” and “5” were ceramic storage jars, placed so that their rims, plugged by a sherd or small pot, were flush with the floor level (Adams 1998: 24). Similarly interred storage jars, as will be seen in Chapter 3, were found in the Eastern Town House at the Heit el-Ghurab site at Giza.

Analysis of the faunal remains showed, significantly, a limited range of animal parts, suggestive of provisioning (Adams 1998: 27). Typological ceramics analysis revealed that a substantial portion of the Old Kingdom findings comprised non-local types. Conversely, ceramics from the First Intermediate Period showed a transition to locally made types (ibid.), perhaps indicative of a disconnect with the central government during that transitional interval.

Discussion. Both Adams (1998: 27) and O’Connor (2009: 84-85) ponder the extent of the role played by the local temple of Khenty-amentiu/Osiris-Khenty-amentiu in the economy of the

town, or at least of the part of the town included in the 1991 excavation area. That Abydos was an important cult center by the late Old Kingdom would render it possible, if not probable, that the town's economy was cult-based. Moreover, the continuity of the town, represented by the accumulation of the town mound over an extended duration—from the Predynastic Period, through the transition of the First Intermediate Period, into the Middle Kingdom, when Osiris had risen to preeminence as a mortuary deity, and later, as the stratigraphy of Kom el-Sultan demonstrates—may indicate that the community was more cult-driven than state-directed.

Lacking detailed ground plans and archaeological history of the Old Kingdom and First Intermediate Period houses excavated to date at Abydos North, however, there is little more that can be said of them. The current archaeological evidence does not define the relationship of the households to the temple and it cannot be said at this point whether the houses reflect the specialized (that is, cultic) nature of the site. Further excavation may bear out O'Connor's assertion, prompted by his consideration of inscriptional evidence from Greater Abydos¹³, that “all the residential and service areas [of North Abydos] may have been directly connected to the temple, its cult, administration and material needs” (2009: 84-85).

¹³ (That is, of the priests and administrators of the temple of Khenty-amentiu.)

2.3 Giza: The Khentkawes Settlement

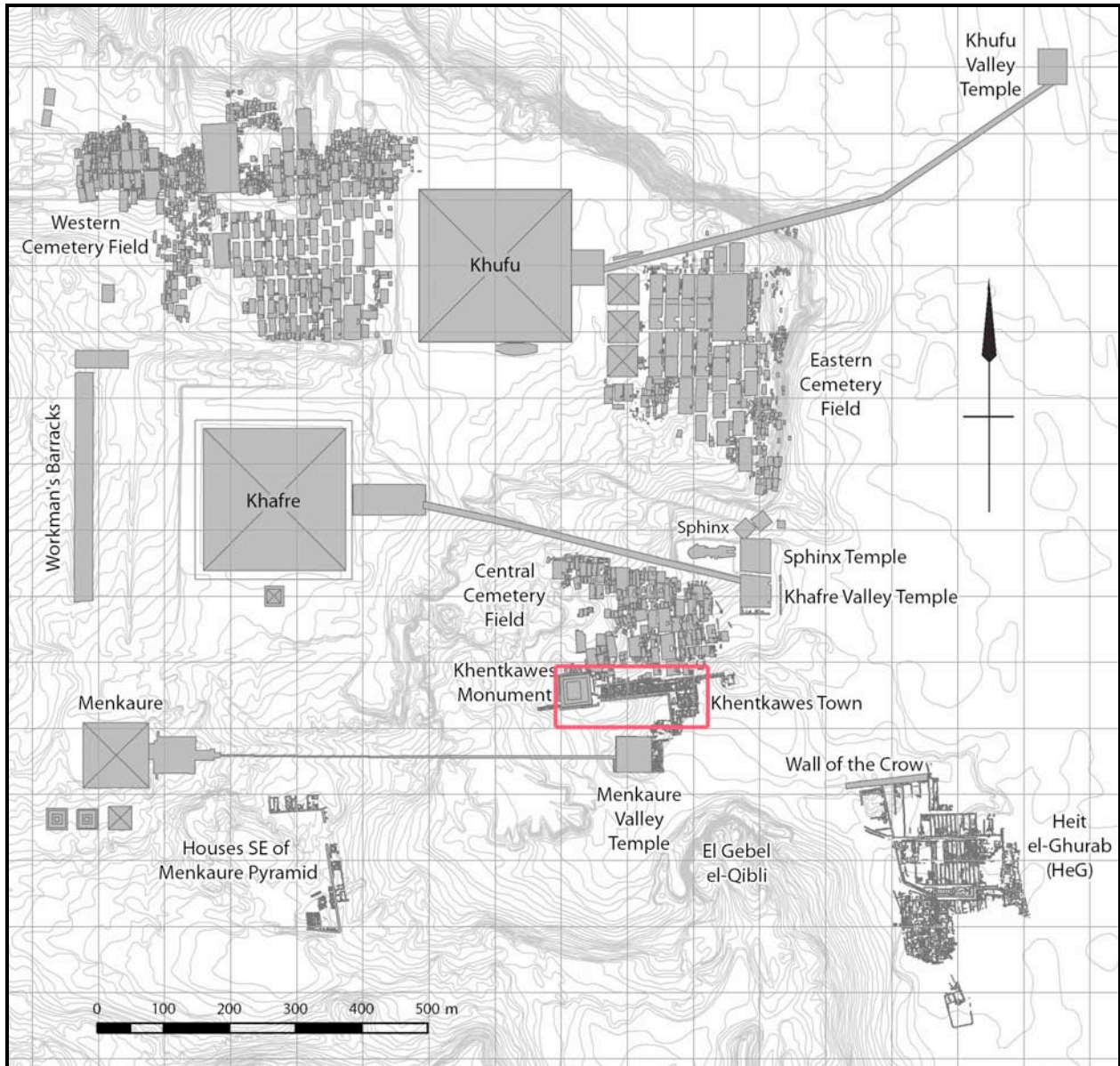


Figure 2.17. Khentkawes Town (outlined) on the Giza Plateau (by Rebekah Miracle).

In November of 1931 Selim Hassan, conducting a third season of excavation of the Giza necropolis for the Faculty of Arts, Fouad I University, located the remains of mudbrick buildings just east of a stone monument then generally referred to as an “unfinished pyramid” (Hassan 1943). This monument lay half buried in sand about half a kilometer northeast of the pyramid of

Menkawre (the third and southernmost of the three famed 4th-dynasty pyramids at Giza). Hoping to find that the mudbrick buildings were part of a complex associated with the unfinished pyramid, Hassan cleared the area in the subsequent three seasons (1932, 1933, and 1934). His work identified the stone monument as a rather atypical tomb, combining characteristics of a step pyramid and large *mastaba* (bench), belonging to Khentkawes¹⁴, an enigmatic queen who may have ruled at the end of the 4th Dynasty (the 4th Dynasty dates to approximately 2575 – 2465 BCE) (**fig. 2.17**).

At the tomb's southeast corner was Khentkawes's mortuary chapel. Extending 150 meters eastward off the chapel was a narrow (1.5-meter-wide) causeway. Hassan found that the mudbrick buildings he had perceived in the previous season were a row of dwellings (presumably of priests of Khentkawes's mortuary cult) lining the north side of this east-west causeway leading directly to the chapel. His excavation revealed at the east end of the causeway a group of larger houses aligning a shorter, north-south axis (a 61.5-meter street), running perpendicular to, and actually beneath, the causeway via an underpass (a tunnel-like "subway") at the point of intersection (Hassan 1943: 39).¹⁵ Khentkawes's subway indicated, in the course of excavations conducted by AERA, that the north-south axis actually predated her causeway (Lehner et al. 2009a: 13; 2009b: 9) and thus was likely a result of chronology rather than the dominance of the *ḥmw-ntr* over the *ḥntjw-š*, as Felix Arnold would believe [1998: 2-3]). It may therefore be conjectured that the causeway, leading directly to her mortuary chapel, was constructed upon her death. The presence of a large limestone threshold with pivot-socket holes

¹⁴ Khentkawes's status and historical placement are ambiguous. Her titles, found by Hassan inscribed on the red granite doorjambs of her tomb-chapel, read "King of Upper and Lower Egypt," "Mother of the King of Upper and Lower Egypt," and "Daughter of the God," suggesting that she may have ruled for a time as a pharaoh, as mentioned by Hassan, who also discusses her uncertain ancestry (1943: 3-11).

¹⁵ The subway was a familiar engineering strategy in the Old Kingdom, having already been employed beneath the respective causeways of Khufu and Khafre at Giza (Hassan 1943: 39).

indicated that the north-south axis had originally been gated¹⁶ at its north end (*ibid.*). Later (AERA) excavations, discussed below, located evidence of a massive second gate with pivot sockets at the eastern end of Khentkawes's causeway (Lehner et al. 2009: 9-11). The two axes together formed an "L" shape, the foot of the "L" pointing south. The whole assemblage—tomb, mortuary chapel, causeway, and priests' settlement—was bounded by a thick (2.75-meter) mudbrick enclosure wall and deemed by Hassan the "Pyramid Complex of Queen Khentkawes" (Hassan 1943).¹⁷

Clearance of the dwellings in the leg of the "L" revealed a strip of six contiguous house units, all marl-plastered and nearly identical in their general construction but with some internal variation. The foot of the "L" contained at least four larger dwellings, which Hassan referred to as possible "mansions" (Hassan 1943: 35-36, and fig. 1 site plan) (**figs. 2.18**). Sandwiched between the four larger dwellings on the east and the six modular units to the west were two smaller contiguous houses that appeared to be foreshortened versions of their eastern neighbors. In total, the community measured 6,402 m². Hassan noted that the regularity of the settlement's layout indicated that it was not the result of "haphazard growth," but rather was "designed as a whole" (1943: 35). Material culture found within the houses was primarily of a domestic nature, comprised largely of ceramic and stone vessels and flint implements (Hassan 1943: 42-46).

¹⁶ In much the same manner as early Cairo, whose gates were closed at night and manned with porters as recently as the nineteenth century (Lane 1895: 15). Smaller manned gates were also present, according to Lane, at the city's larger thoroughfares and at the entrances to the various quarters of the city (*ibid.*).

¹⁷ Selim Hassan considered that he had also found, southwest and outside the walls of the L-shaped community, a valley temple completing the Khentkawes ("pyramid") complex (Hassan 1943: 51-62). This was reinterpreted in the course of AERA's 2005 excavations to be an "ante-town" associated with the valley temple of Menkawre (Lehner et al. 2006: 11-12). AERA has more recently found, east of the Khentkawes causeway, an eastern extension of the Khentkawes town, an associated ancient harbor, and structural remains that may possibly be Khentkawes's valley temple (Lehner 2014; 2011a: 6-11; 2009a), all of which suggest that she ruled in her own right.

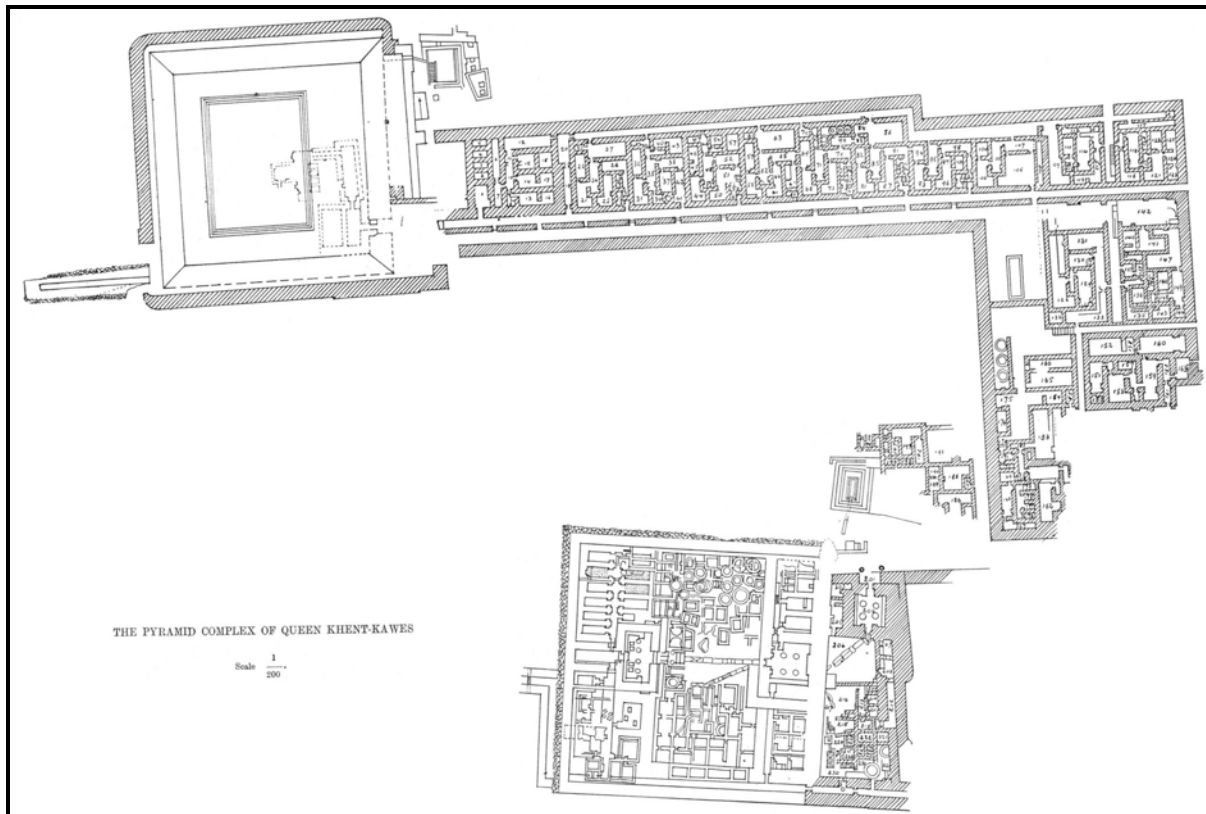


Figure 2.18. Khentkawes settlement (after Hassan 1943: Figure 1).

Numbers were applied by Hassan to each dwelling and to its internal rooms. The houses lining the east-west axis (the leg of the “L”) each possessed two entrances, he noted¹⁸, one on the southeast, opening onto the causeway, and one on the northwest, opening into a corridor separating the chain of dwellings from the northern enclosure wall of the complex. In contrast, the larger, easterly houses, which Hassan reported had been greatly damaged by the *sabbakhiin*, opened onto the north-south corridor on either side of which they were aligned (Hassan 1943: 39).

Hassan listed the general components of the dwellings in the leg of the “L” as follows: 1) a main entrance in the northwest opening onto the east-west corridor separating the dwellings

¹⁸ The presence of additional entrances (discussed below) in some of the dwellings was in fact indicated by Hassan on his map (1943). He did not, however, comment on these; neither did Badawy (1954: 55, fig. 41), Felix Arnold (1998), or Brinks (1979).

from the northern enclosure wall of the complex; 2) a vestibule off the entrance; 3) a reception room leading from the vestibule; 4) a living room leading from the reception room (Hassan mapped, but did not comment on, a pilastered niche at the southern end of each living room); 5) two bedrooms leading off the living room; 6) an open court east of the living room; 7) a kitchen (indicated by the presence of hearths) and two to four small chambers leading southward off the open court, including a “small water-storage room¹⁹”; and 8) an opening from the southernmost subsidiary chamber onto the east-west corridor leading to the mortuary chapel and separating the dwellings from the causeway (Hassan 1943: 38). Internal variation within this paradigm consisted primarily of subdivisions within the reception room and reassignments of function. For example, in one of the dwellings, discussed further below, a collection of silos was found in the reception room, which had been walled off, presumably to enclose the grain supply. Hassan notes that the *mastaba*-tomb of “Irerw, Overseer of the Granary,” sits directly opposite this particular house unit (ibid.). In another dwelling a hearth was found in the “living room” (ibid.).

There are elements in Hassan’s above layout that elicit comment. Notably, we recognize in the series of small chambers preceding the houses’ southeastern access a familiar zigzag trajectory of transitional spaces into, and out of, the building—a rather exaggerated form of the doglegged access we have observed in the majority of houses presented in the preceding discussions. Moreover, though not noted by Hassan, the southeastern access of his “fifth” house was set off by a formal step found in later excavation (discussed below) (Yeomans 2009). It would appear that the southeastern opening, formalized and endowed with privacy screening,

¹⁹ Hassan’s wording here is less than precise: no water jars were described as having been found (Hassan 1943: 38). Near the bottom of the page a second mention of water jars simply reads: “. . . and one small room at the rear [of his room no. 66] which may have served to house the water-jars” (ibid.). Felix Arnold (1998: 10 and note 18) may have jumped hastily to a conclusion that Hassan had actually discovered water jars in these small chambers.

constituted the houses' "front" or "main" entrance, though Hassan made the reverse interpretation, listing the northwestern entrance as "main" (Hassan 1943: 38).

Whether Hassan actually found water jars in any of these small chambers (see note 6 above), it can be speculated that the spaces served as a zone of ritual transformation (where ablutions may, or may not, have been performed) that prepared the priestly occupant for entrance into the causeway—the ritual path leading to the cult place of Khentkawes. We can probably assume that Khentkawes's causeway was a "sacred space," while the northern corridor was a profane one, dedicated for quotidian use (Badawy 1954: 54-55; enhanced by F. Arnold 1998). In a special-purpose cult community we may expect, at least to some degree, the application of a different spatial logic than that applied within a lay community. Indeed Felix Arnold postulates that state-built housing was a means by which the state imposed, and reinforced, its own ideals on certain social groups, here namely the priesthood of the cult of Khentkawes (1998).

Also noteworthy is the position—as located by Hassan—of the northwestern access of these houses. From that opening, there are both a direct line of sight and direct flow of access through the vestibule/reception room to the adjacent living space on the south; in contrast, the southeastern access, as noted above, is preceded by a zigzag of transitional spaces that interrupt the visual and physical trajectory. One might consider whether the significance of the pilastered niche at the southern end of the living space accounts for this. The presence of the niche may define the space as "official" rather than domestic, creating, as Felix Arnold suggests (1993: 13), a spatial separation between the visitor and the occupant that serves to emphasize the occupant's authority. The priest who occupied the house, ensconced in the niche, may have conducted cult-related business in this chamber. An official space would not only obviate the need for domestic privacy but may require a direct interface. It is relevant to remember here that, as a walled and

gated community (as noted above), the Khentkawes priests' settlement was an insular environment, endowed with implied measures of safety and control.

Although Hassan regrettably did not provide individual house plans, a consistent treatment of phasing, or written acknowledgment of additional entrances that he had mapped, his research clearly reveals a planned community that accommodated a measure of architectural variation. Whether the variation was the result of personal whim, as he asserted (1943: 38), is not known. It may be more realistic to consider that changes were pragmatic, made to support the various duties required by the priests who inhabited the settlement. The enclosure of the above-mentioned silos, for example, would have enhanced the security of the grain supply and would thereby have helped the priest in charge of that supply to carry out his responsibilities. Hassan's findings (specifically those concerning the Khentkawes settlement) were published in 1943 as *Excavations at Giza IV*, with site plans reissued in the frontispieces of volumes *V* (1944) and *VI, Part III* (1950).

In 2005 Mark Lehner and the team of Ancient Egypt Research Associates, Inc. (AERA), began a comprehensive re-examination (clearing, mapping, excavation, and some reconstruction) of Khentkawes's complex in light of the alarming degradation the site, which had not been protectively backfilled after its investigation in the 1930s, was experiencing from horses, camels, and 4-wheel-drive vehicles traversing the area. As an AERA co-field director, I participated in this expedition, of which an additional goal was to increase our understanding of the general Giza context of our Heit el-Ghurab site, 400 meters to the southeast, by gathering information from a possibly contemporaneous special-purpose settlement. The work has continued seasonally since 2005 and remains ongoing. Findings have been published in *Giza Occasional Papers 2* (Lehner, Kamel, and Tavares 2006), *Giza Occasional Papers 3* (Lehner, Kamel, and Tavares

2009), and *Giza Occasional Papers 4* (Lehner, Kamel, and Tavares 2009), and in the biannual AERAGRAM newsletter accessible online at www.aeraweb.org.

Khentkawes Town: House E: Earliest phase of occupation. One of AERA's goals for the 2009 season at the Khentkawes settlement, or "Khentkawes Town" (KKT), as it was dubbed, was to fully excavate and restore a representative house in the chain of dwellings that Hassan had found lining the causeway. In AERA's preceding seasons, mapping of the chain had already begun, starting at the easternmost dwelling and proceeding westward. Letter designations were applied west to east. "House E," situated roughly in the middle of the chain (**fig. 2.19**), was chosen for full excavation and restoration due to its comparatively fair state of preservation. This assessment was of course relative, for the site overall was badly eroded. Archaeologist Lisa Yeomans, assisted by Hanan Mahmoud, conducted House E's excavation (Yeomans 2009).

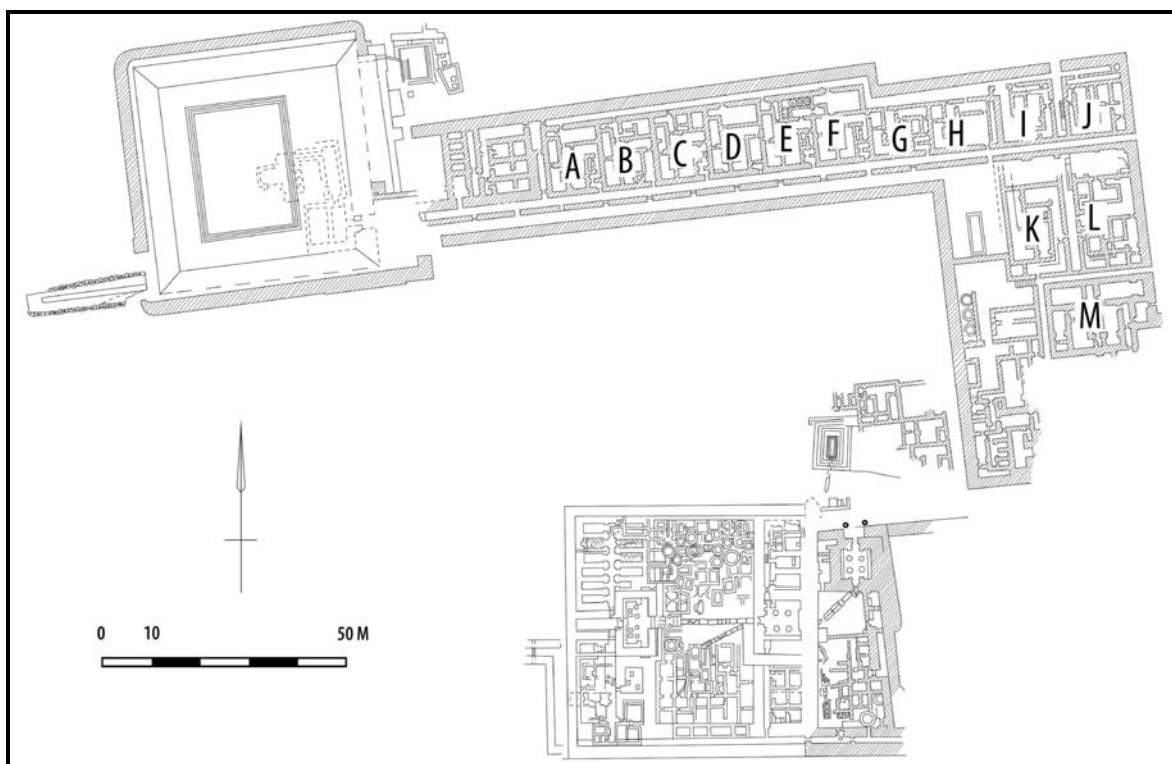


Figure 2.19. Khentkawes settlement (after Hassan 1943: Figure 1; letters superimposed by Alexandra Witsell).

House E is a rectangular²⁰ mudbrick construction, measuring 15.7 m north-south by 12.0 m east-west, or 189 m². External walls were significantly thick (approximately 0.8-0.9 meters wide) and internal walls were all roughly the same width of 0.55-0.62 m. As Hassan had noted (1943: 35), the walls and floors of the house, like all the houses lining the Khentkawes causeway, were coated with yellowish marl plaster. The excavators found, in section, that traces of the plaster extended northward from the dwelling to the northern enclosure wall, indicating that the enclosure wall and the housing units aligning the causeway were part of the same construction event (Yeomans 2009), as Hassan had assessed (1943: 35).

Felix Arnold, citing Badawy (1954: 55), argues that there is some evidence of vaulted roofing in the houses of the Khentkawes settlement, specifically in the “living room” (F. Arnold 1998: 13). While AERA excavators found no such evidence at House E (no roofing material survived), Arnold correctly extrapolated from Endruweit’s thesis (Endruweit 1994) that the walls of the Khentkawes houses were thicker than necessary for climate modification alone (F. Arnold 1998: 13; Endruweit’s study of thermal fluctuation in mudbrick houses of Amarna concludes that walls of up to 0.5 m in thickness are sufficient for regulating internal temperature, i.e., keeping the interior neither too hot nor too cold). By extension, Arnold reasoned, the thick walls must therefore be structurally supportive (*ibid.*). Whether the walls of the Khentkawes houses supported a vaulted roof, or perhaps a second story, or a combination thereof, remains conjectural. It is worth noting that many of the mudbrick tombs in the possibly contemporaneous Old Kingdom “Workers Cemetery,” located west of our Heit el-Ghurab site, are topped with vaulted roofing (personal observation).

²⁰ Felix Arnold perplexingly referred to it as a square of 20 x 20 cubits (1998: 8). His calculation would yield 210 m², taking one cubit as 0.525 m.

Originally House E comprised at least eight rooms (**fig. 2.20**), whose layout generally matched Hassan's written description above (Hassan 1943: 38) and need not be repeated here. Room dimensions, not provided per house by Hassan, were as follows for House E: northern vestibule (1.6 x 2.0 m), reception room (8.5 x 4.0 m), (nicked) living room (6.25 x 2.2 m), northern bedroom (5.0 x 2.0 m), southern bedroom (5.2 x 3.0 m), open court (4.6 x 2.0 m), kitchen (7.0 x 3.5 m), and sequence of rooms preceding the southeastern access (total space: 6.25 x 2.25 m) (Yeomans 2009).



Figure 2.20. Ground plan of House E: earliest occupation phase (after Yeomans 2009: figure 4).

Excavation showed that, at this earliest phase of occupation, the house possessed three external entrances: two in the northwest, accessing the northern corridor, rather than one, as Hassan had thought²¹, and one in the southeast, accessing the causeway. Several door (pivot) sockets were found in association with both external and internal doorways and, as noted above, the southeastern entrance was formalized by a step. The newly found additional northwestern entrance, positioned slightly west of the entrance recorded by Hassan, confounds our understanding of the flow of access and line of sight into the “living room” to the south. The location of that westernmost entrance does in fact create a dog-legged access into both the vestibule and the living room, in contrast to its partner entrance, as discussed above. An understanding of how doors may have been used to control access (whether certain doors were kept open/closed during set times) may shed light on the issue. For example, while the household was engaged in the performance of official, perhaps administrative, duties, was the westernmost entrance kept closed in favor of the easterly access? Lacking such information, the function of the two northwestern entrances and their relationship to each other remain open questions.

Excavation also revealed, in the house’s west wall, two internal accesses, mapped but not discussed by Hassan, opening into adjacent house “D” on the west. Moreover, House E’s northeast corner was completely devoid of a wall, indicating a large area of space shared with adjacent house “F” on the east. It was found that this phenomenon of “house intermingling” also applied between the neighboring pair of dwellings on the east, Houses “F” and “G” (Lehner 2009: 13), thus involving no less than four dwellings, or over 50% of the strip of six modular units. The impact of such intermingling on the dynamics of the household(s) and on the flow of

²¹ The second northwestern entrance, which future excavation may show is present in the other units as well, was unknown to Felix Arnold (1998) and Brinks (1979: 49-53) and would likely have impacted their respective ground-plan analyses, as would acknowledgment of the “internal” entrances indicated on Hassan’s map (1943) and discussed below.

access across households, and the fact that the houses appear to have been intentionally designed with this inter-flow from their inception merits significant further consideration. The “kitchen” (room 73) presented a thick layer of ash on the floor in addition to scorching of the west wall, supporting Hassan’s assignment of function to that space (Yeomans 2009).

House E: Change over time. Excavation revealed that, by its latest phase of occupation, House E had undergone significant changes of form and function. It appears that an effort had been made to limit the number of access points into the building. Both northwest external entrances and the southernmost of the two internal western openings were blocked off with mudbrick. Additionally, four circular, mudbrick silos (the abovementioned silos found by Selim Hassan over sixty years earlier) were added to the northeast space of the house (the reception room), which we now understood was accessible to the neighboring eastern dwelling (“F”). The space containing the silos was then completely divided from the western part of House E by a relatively narrow (0.36 m) north-south wall at its western end and by the blocking off of its two accesses to the southern rooms (**fig. 2.21**). House E could now be entered only via the southeastern access and via the neighboring house (“D”) to the west. Stratigraphy showed that the installation and enclosure of the silos occurred at the same time, indicating a change in function of the former reception room—now purposed to house the grain—and a shift in responsibility for the silos to neighboring household F on the east (Yeomans 2009; Tavares and Yeomans 2009). The presence of Ierw’s tomb directly opposite House E, as noted above, leads us to speculate whether this Overseer of the Granary may have occupied the house, administering the grain stored in the silos until his death, after which the responsibility was re-delegated (**fig. 2.22**). Perhaps Felix Arnold’s pronouncement (1998: 3) that the inhabitants of Khentkawes Town seemed to have been interchangeable actors in established roles is correct.

It is worth noting that a significant deposit of ash had been deliberately packed under, and around, the silos. AERA excavations also revealed ash in association with a set of silos in a recently discovered eastern extension of the site (Lehner 2011a: 9). The excavators assessed that the ash was probably used as a deterrent to insects (Yeomans 2009; and the valuable brief study by Miller [1987] explains that ash performs as an insecticide by dessication). Ash as such a deterrent is sometimes employed today in rural Egypt (Hussein Rekaby, archaeologist with the Egyptian Ministry of Antiquities: personal communication 2012).



Figure 2.21. House E showing later-phase changes (after Yeomans 2009: Figure 6.)

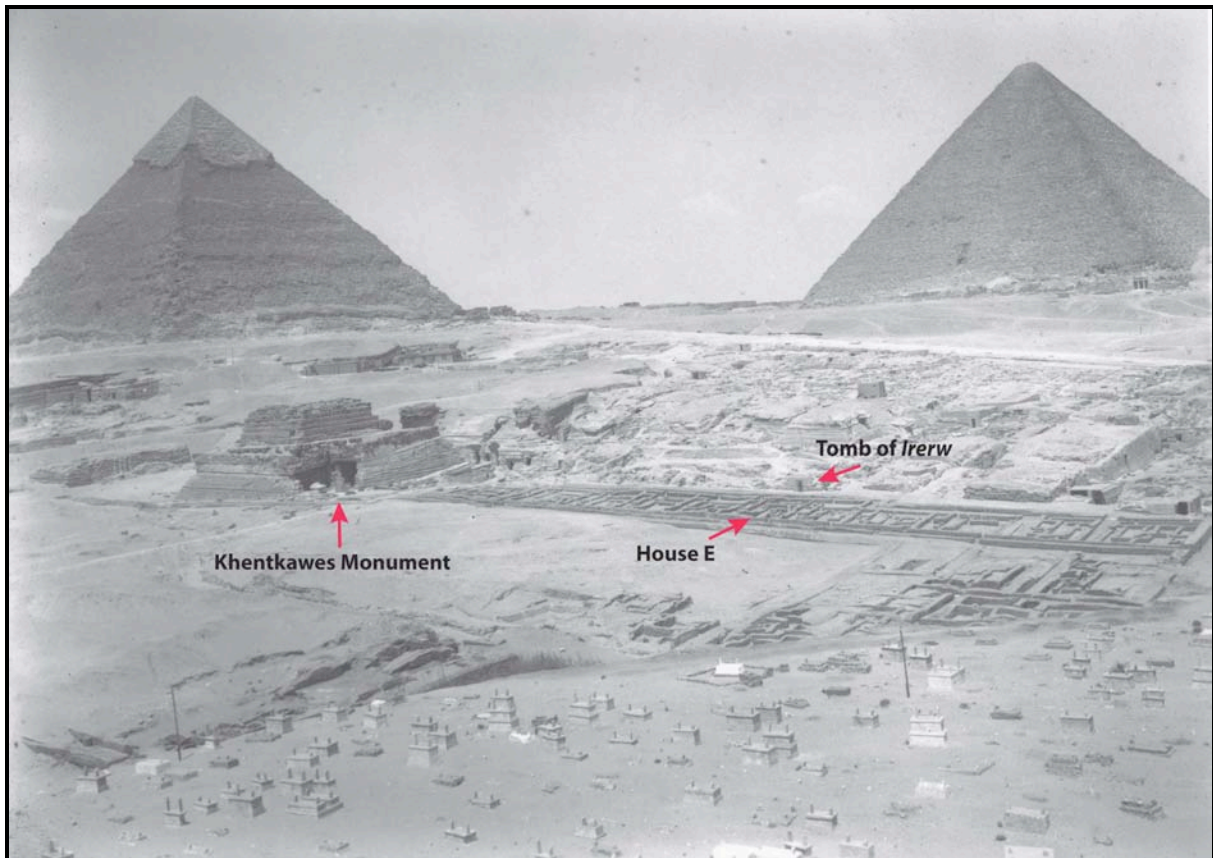


Figure 2.22. Khentkawes settlement. Ierw's mastaba tomb sits opposite House E (photograph courtesy of Museum of Fine Arts, Boston).

Hassan had designated two rooms that lined the west wall of the house as bedrooms (Hassan 1943). The northern of these, his room 69, was found by the AERA excavators to contain, in the house's latest phase of occupation, a number of small hearths abutting the eastern wall, as well as a substantial hearth in the room's southeast corner. The associated ashy deposits contained burnt fish bone and occasional pottery. The excavators noted: "The thick ash layer covering the room seems very substantial and brings into question the nature of the burning within the room. It is not certain if this is just buildup from domestic fires or production on a larger than domestic scale or possibly the result of an accidental fire in the kitchen area" (Yeomans 2009). In light of this evidence we have reason to re-think the status of later-phase

room 69. Given that it still shared an access with House D to the west, it seems possible that the two households may have shared some cooking duties in the room. Moreover, we have cause to wonder whether the occupants of houses D and E were responsible for provisional cooking—that is, cooking for other households in the Khentkawes community. (As Felix Arnold reminds us [1998: 11-12], the preparation of food for cult offerings may certainly have been involved.) The walling off of the silos, which effectively placed them under the control of household F, may have been the product of a similar—if not the same—re-delegation of duties: household E’s grain-storage responsibilities may have been transferred to household F in favor of its shared cooking duties with household D.

Selim Hassan noted in the foot of the “L” (the north-south-aligned axis of the Khentkawes settlement) an area containing three additional mudbrick silos (1943: 40 and fig. 1). AERA excavations located a set of five more silos, packed in ash as noted above, in the eastern extension of the complex in association with corridors, a courtyard, and chambers (one of them with a pilastered niche), all of which are currently being studied (Lehner 2011a: 9). These additional sets of silos may suggest that the examples found in House E were indeed designated for the priests’ complex, while areas beyond were separately provisioned.

Future excavation of House E’s neighbors—House D on the west and House F on the east—and the production of their ground plans will inform us on the flow of access within and between the three dwellings and shed light on the nature of the relationship between them. For now, our information is incomplete, and our understanding, hampered.

House E: Abandonment and rebuilding. There is some evidence that House E was abandoned before a phase of repair and re-occupation. The walls in the southeastern part of the building appeared to have been cut nearly down to their bases and then reconstructed with a

brick type smaller than that used in the house's original construction, and with a different building tradition utilizing a core fill of ashy silt and pottery fragments (Yeomans 2009). Reisner's excavations at Giza in the 1930s revealed that the valley temple of Menkawre had incurred severe damage, possibly in the 5th Dynasty, from flash-flooding of the wadi south of the Giza Plateau (Reisner 1931: 44). It is hoped that further excavation will indicate whether the Khentkawes complex suffered a similar calamity that may have necessitated its abandonment and later repair.

House E: Reconstruction. In 2011 House E was reconstructed (**fig. 2.23**) under the direction of AERA co-field director Ana Tavares, architect Günter Heindl, and archaeologist Ashraf Abd el-Aziz, who also manufactured the required mudbricks. The project was detailed in Lehner (2011a): *AERA Annual Report 2010-2011*. One of the most revealing discoveries the three-dimensional dwelling produced was the degree of constriction imposed by the succession of southeastern transitional chambers. It was noted: "The reconstruction accentuated how constrained access must have been through the southern entrance with its zigzag series of small spaces. . . . As we made our way through the entrance, we discovered how awkward it was to physically navigate, compared with our observations based on the map alone" (Ana Tavares in Lehner 2011a: 28). It can be tentatively speculated that these spaces lent themselves to the performance of ritual, the maze of walls serving to punctuate a mystical choreography of incantations, postures, gestures, and the like.



Figure 2.23. House E reconstructed. View to the south (courtesy of AERA).

Discussion. It should first be acknowledged that House E is a component of a special-purpose community dedicated to the mortuary cult of Khentkawes. When analyzing the structure in terms of Ricke’s tripartite house (1932: 25-42), we reap ambiguous results:

- The structure does have a vestibule that links it with the exterior; indeed it had two vestibules, one in the north and one in the south, each of which featured a dog-legged access until the latest phase of occupation, when all access in the north was blocked. The south (main) entrance is preceded by an exaggerated dog-legged access that was likely cult-purposed. The “exterior” to which the structure is linked, however, is not a public one: the house is sandwiched between corridors on the north and south, aligning walls that enclose and sequester this priests’ community.

- The structure may have had sleeping quarters in the southernmost of Hassan’s two designated bedrooms (his room 68), although how private they were is questionable. The space would have been exposed to the commotion of cooking activities directly to the north, as well as traffic entering from, and exiting to, House D, and also the more social, possibly business-related activities taking place in the reception hall directly to the east. It is also possible that the niche at the south end of the “living room” functioned as a sleeping space; however, as noted above, in the earlier phases of occupation this space was in the direct line of sight and access from the westernmost entrance on the north, rendering its privacy also questionable.

- Where the daily-life activities of the occupant(s) of House E may have taken place is not clear. We have evidence of cooking in both the kitchen designated by Hassan (his room 73) and in his northern bedroom (room 69), which appears to be shared with House D on the west. The virtually central position of the niched reception room (Hassan’s room 71) may characterize it as a place of official work. The mortuary chapel of Khentkawes may itself have served as the primary venue of the priests’ daily activities.

House E does not appear to conform to a tripartite plan. Not only does its interconnectedness with adjacent units challenge our notions of the privacy we associate with domestic life, but lacking awareness of what “osmosis” transpired between its architecturally semi-permeable borders renders us unable to locate with certainty where activities actually took place and what functions its spaces served. Whether other structures in the Khentkawes settlement prove representative of a 4th-dynasty house will hopefully be determined by future excavation. For the present, it appears that the first definitive element constituting a house—of any period—is necessarily four discrete walls.

“ . . . never forget that the internal structure of the dwelling may be important to a full understanding of the system.”—Bill Hillier and Julienne Hanson (1984: 123)

Chapter Three: A Tale of Two Houses The Eastern Town House (ETH)

At the start of the new millennium the Egyptian Supreme Council of Antiquities (now the Ministry of Antiquities) embarked on a massive construction project to erect a security wall around the circumference of the Giza Plateau in order to protect the antiquities there from the further encroachment of neighboring modern settlements. Engineers and a construction crew were scheduled to arrive in the vicinity of Heit el-Ghurab in mid-2002 to begin building this wall between the archaeological zone and the neighboring present-day community of Nazlet el-Samaan, which abuts our site on the east. We have long been aware that HeG extends beyond the eastern boundaries of our concession and, alas, beneath the modern settlement (as revealed, for example, by the major sewage projects conducted in Nazlet el-Samaan in the early 1990s). In anticipation, therefore, of the security wall’s construction, the AERA team, directed by Mark Lehner, conducted surface scraping early in the 2002 season, as far to the east as our time allowed, to capture the outlines of any remains in the path of the impending wall. Through this effort we succeeded in revealing an exposure of 110 m north-south by 40 m east-west along the northeastern side of HeG, containing outlines of a dense area of mudbrick chambers, corridors, and small courts—an architectural maze, in stark contrast to the rigidly planned, orthogonal Gallery Complex to the west. We appropriately designated this apparently informal, organic district—perhaps a suburb of the more organized neighboring urban environment—“Eastern Town” (**fig. 3.1**; Lehner 2002a: 64-68; 2002b; 2004).



Figure 3.1. Eastern Town and the Eastern Town House (digitized by Rebekha Miracle).

The known extent of Eastern Town was covered by alluvial mud-mass. The town is separated from the more formal areas to the west by a large, north-south wall that runs along much of the town's western edge, and a parallel street or corridor (the "Eastern Roadway"), that runs just within this wall. Measuring 1.5 meters wide and apparently devoid of ancient construction, the Eastern Roadway is also bordered by a wall that runs along its east side. Thus sandwiched between two walls, the roadway is endowed with the character of a corridor. The southern extent of Eastern Town is obscured by a modern soccer field. At this point in our excavation we can see that at least part of Eastern Town pre-dated the construction of the Royal

Administration Building (RAB), which lies to the southwest (see **fig. 3.1**), and that, moreover, some part of the town was demolished to make way for its construction, prompting us to wonder whether the town may have existed during the reign of Khafre (2472 – 2448 BCE), or even of Khufu (2509 – 2483 BCE). Further excavation will be necessary to clarify the full context of stratigraphic relationships.

The ruin surface of Eastern Town presented the outlines of possible dwellings—that is, discrete units enclosed by four walls. We selected to excavate what surface scraping revealed to be the most intact and cohesive of these (which luckily did not lie in the path of the new security wall)—dubbing it tentatively the “Eastern Town House” (ETH) (Lehner et al. 2009c). In 2004 AERA archaeologist Dan Hounsell, with the assistance of Emma Hancox, supervised the excavation of the house to its latest occupation phase in a span of four 5-by-5-meter squares (4-B29, 4-B30, 4-C29, and 4-C30) that ultimately revealed all but the southernmost reaches of the building. In the following year Anies Hassan cleaned two additional squares to the south (4-A29 and 4-A30), exposing the southern borders, while Kathryn Bandy excavated a selection of targeted sondages to help us understand the underlying stratigraphy. ETH was excavated using the Museum of London Archaeological Services’ single-context recording system. Field records were compiled by Dan Hounsell in 2004 and 2008 (Hounsell 2004, 2008). Also on file with AERA are the specialists’ findings of Dr. Anna Wodzińska (ceramics); Dr. Richard Redding (fauna); Tim Stevens (lithics); and Laurel Flentye (pigments).

In the fall of 2005 the Eastern Town House was reconstructed under the direction of conservator Edward Johnson, architect Günter Heindl, and archaeologist Ashraf Abd el-Aziz, who also produced the mudbrick for the project (Johnson et al. 2006; Lehner 2006). Images from the reconstruction illuminate our description of ETH below.

The Eastern Town House lies at the northwest edge of the community, along the Eastern Roadway. The surface plan revealed mudbrick enclosure walls surrounding the dwelling on all four sides, isolating it from surrounding structures and rendering it a discrete unit. The configuration of internal walls indicated that the unit comprised three distinct zones (discussed below): an internal “core” (zone A); an inverted L-shaped periphery (zone B) that wraps around the core on the north and east; and an L-shaped periphery (zone C) that wraps around the core on the west and south (see **figs. 3.11 and 3.12**).

3.1 The Life-cycle of the Eastern Town House (ETH)

Comprehensive excavation of the Eastern Town House was conducted only to its latest phase of occupation. Our knowledge of earlier occupation phases derives from the abovementioned sondages and from nine intrusive burials, possibly Ptolemaic/Roman or Christian (Lehner et al. 2009c: 16), which penetrated the ETH remains. The sections of these burial cuts provided vertical exposures of the house from its foundation level to its abandonment and destruction. Neither the sondages nor the burial cuts revealed any phase of use predating the house’s construction.

The Eastern Town House presents a straightforward phasing sequence consisting of pre-construction and construction (phases 0 through 2), initial occupation (phase 3), and remodeling events with subsequent occupation (phases 4 and 5), followed by further structural alterations and final occupation (phase 6). A thick layer of ash (phase 7) preceded the collapse or demolition of the walls (phase 8). A layer of alluvium (phase 9) capped the area, which was finally covered over by Aeolian sand and penetrated by intrusive late burials (phase 10).

The enclosure walls of the structure were composed of sandy mudbrick and occasional stones (limestone and granite), a composition seen frequently across the site (Abd el-Aziz 2008).²² They were erected on loose, sterile desert sand that had first been prepared with a compact level surface of sand mixed with silt. It must be noted here that the original west enclosure wall was, in fact, not found within the limits of excavation. We extrapolate its location from a transect excavated in 2004 in eight squares directly northwest of ETH. This transect exposed the abovementioned north-south corridor that we call the Eastern Roadway, the eastern wall of which continues south, in alignment with what is likely ETH's original western boundary (Lehner et al. 2009c: 16). Once complete, the original enclosure walls measured approximately 0.50 m in thickness and ran 11.22 m north-south by (at least) 9.10 m east-west, spanning an area of at least 101.92 m².

Internal walls, like the enclosure walls, were constructed primarily of sandy mudbrick, but were considerably narrower, exhibiting widths of 0.25 m in peripheral zone C, 0.30 to 0.35 m in peripheral zone B, and 0.30 to 0.35 m in the core (zone A), with the exception of the core's easternmost wall, which, at 0.50 m wide, was of the same thickness as the external walls.

We can assume the varying wall thicknesses reflect the varying structural support required by each wall. Though no associated roofing material survives, evidence of roofing in the form of mud impressions found in our site's "Western Town" (Lehner et al. 2009a: 34-35), discussed below, inform us that at least some roofing was of wattle and daub—that is, wood beams onto which were tied reed stalks plastered over with mud—virtually the same type of roofing found in traditional houses of rural Egypt today (see Appendix: **figs. 5 and 35**). Which,

²² The bricks used in ETH's construction typically measured 27 cm x 12 cm x 8 cm, putting them in the "small" category of Abd el-Aziz's typology (2008).

if any, areas of ETH were roofed in addition to the core (zone A), and whether any areas supported a second story, are questions considered below.

A walk-through of the earliest occupation phase (phase 3). The main, indeed the only, entrance into the core (zone A) was a 0.60-meter-wide access centrally located in the core's west wall (**fig. 3.2**). This entrance, constituting one of three access points leading off the western L-shaped periphery (zone C), opened into a small rectangular space, A1, measuring 1.10 m by 2.85 m. The east and south walls of A1 were built as one unit [4181], wrapping around to enclose the space, which may have served as a vestibule—a transitional area between the periphery and the interior (Arnold 1989: 77)—and also, as Ricke pointed out (1932: 6-15), may have barred the neighbors' view and kept out the wind and weather (his point is especially valid when taking into consideration Egypt's sand-bearing *khamaasiin* winds). From the core's entrance the flow turns ninety degrees northward in a dog-legged pattern to access the threshold in the opposite northeast corner of the vestibule (A1), leading into a considerably larger, reverse-L-shaped space, A2, measuring 5.20 m by 3.50 m. The flow stops here in A2, requiring one to backtrack through A1 to re-enter zone C.

east-west.²³ Its earliest floor was of silty clay and the interior surface of its walls was plastered with marl (cf. walls of B2, below). From C1 the flow moves eastward, accessing rectangular space C2, which measures 3.60 m by 2.25 m. The initial (phase 3) floor of C2 was a soft, ashy, clay silt surface. The marl-plastered walls had been scorched black and red. Although we found no associated hearth, either in this earliest phase of occupation or in subsequent phases, the space had clearly experienced intense localized burning, perhaps of an industrial nature. From C2 the flow continues eastward through an access into C3, a considerably narrow space measuring 3.60 m by 0.95 m, where an ashy clay floor had been laid down. This surface was curiously cut by a deep, rectangular pit, 0.48 m wide, abutting and spanning the north wall of the room. Inside the pit we found apparently re-deposited materials: domestic pottery sherds, animal-bone fragments, and a few cylindrical faience beads, all mixed with the overlying tumble. From this small space (C3) access flows out the southeastern side of the building into a possible back “alley” (a narrow, north-south corridor devoid of architecture), running parallel to the house. The function of C3, a closet-sized narrow space, less than a meter wide, is an enigma. We can only remotely speculate that it may have been used for the storage of raw materials for production-related activities that may have taken place in neighboring space C2, or for the storage of the products produced in space C2 before they were handed over for delivery elsewhere via the “back door” into the alley.

We continue to contemplate whether peripheral zone C was primarily an open, or a covered, court area. No evidence, such as base plates or postholes, was found of wooden columns that would have provided support for roofing of the long, narrow stretch of the western portion of space C1. However, according to Felix Arnold (2001: 126), a “timbered roof” (wood beams covered with reed matting: a wattle-and-daub construction lacking the mud plaster) spanning a width of up to 3.50 m may not require vertical supports. C1’s maximum width of 3.60

²³ As noted above, we extrapolate the location of ETH’s original west border wall.

meters would qualify the space for this light form of roofing. Thus the question remains open. That intense thermal activity occurred in adjacent space C2 would certainly preclude roofing there.

From the northern portion of C1, access flows eastward into zone B, specifically rectangular space B1, measuring 2.90 m by 1.65 m (see **fig. 3.2**). Space B1 contains interesting early-phase features—namely, a small, hand-fashioned clay bench associated with a clay-lined circular pit (presumably a pot emplacement), in phase with an ashy clay floor. The bench abuts the north wall and measures 0.42 m by 0.38 m, standing 0.10 high. On it sat a nearly complete beer jar. South of the bench, at a distance of 0.65 m, rests the in situ clay-lined pit. At a depth of 0.27 m and a diameter of 0.37 m, the circular pit is compatible with a CD22, a flat-bottomed, often spouted, vessel known from the Old Kingdom (an example, discussed below, was found in adjacent space B2).²⁴ In the northeast corner of B1 is a 0.33-meter-wide access, flanked by roughly hewn limestone doorjambs, leading eastward into space B2. Forming an inverted “L,” space B2 wraps around the northeast corner of the core and measures 4.35 m long by 2.60 m wide. The walls of B2 were devoid of early-phase plastering, in contrast to the marl-surfaced walls of C1. In the southwest corner the flow moves southward through a 0.52-meter-wide access into space B3, measuring 2.60 m by 1.90 m, where the walls did bear traces of marl plaster. Interestingly, B3’s northeast corner featured a small enclosure abutting the east wall and bounded on the north, west, and south by a low, mudbrick partition (1.70 m by 0.70 m, including the width of the partition) with no obvious point of entry. We designated the enclosure “space B4.” The bottom of the space was lined with regularly laid mudbricks that rose to 0.46 m below

²⁴ Examples of CD22 vessels were found, for instance, by Reisner in his excavations of Menkaure’s pyramid complex (Reisner 1931: fig. 75); and by Kromer in his excavation of 4th-dynasty settlement debris at Giza (Kromer 1972: pls. 15:4, 16:2, 16:3); and see Wodzińska’s pottery manual (2011: 137) and ceramics report for HeG (2007: 301 and figs. 11.6, 11.35).

the tops of the partition. The excavators were able to access the space by stepping, or bending, over the partition, suggesting similar means of ancient access. It is conjectured that B4 may have been a space for grinding grain: examples of this activity being performed kneeling down with the use of a saddle quern and grinding-stone are illustrated in the 5th-dynasty *mastaba* of Ti (Steindorff 1913). Here the flow stops: in order to exit the building, one must retrace the route back through B2 and B1 into zone C's space C1.

Whether zone B was initially an unroofed area is unknown. The thickness of its walls (0.5 m) would have provided substantial support for a roof. Space B1's pot emplacement with associated bench and ashy floor suggest that cooking may have taken place there. While it may be tempting to assume that such activity would preclude the presence of roofing (or allow, at the most, for a lightweight un-plastered roofing that would provide both shade and ventilation, such as that described by F. Arnold above [2001: 126]), we should consider that portable braziers are used indoors, with ventilation provided by open windows and doors, for both cooking and warmth in some traditional Egyptian houses today (see Appendix: House Two; and also House One, Figure 4, which shows ventilation provided by simple, un-framed, mud-fashioned openings in the wall). The question of whether spaces B2 and B3 (with small enclosure B4) were covered is inscrutable at this phase: B2's absence of plastering may perhaps indicate, by its informality (?), the absence of roofing.

The flow of movement reflects that, from its earliest occupation phase, the Eastern Town House featured three physically distinct zones, A, B, and C, all of them accessed from—and only from—open space C1. The flow diagram below renders the zoning especially apparent (**fig. 3.3**). At this early phase little can be said of how the zones may have related to function (that is, how the space in the zones was used); this will be considered below as evidence gathered from later

occupation phases supplements our information. What can be presently observed, however, is a relatively secluded core accessed through a vestibule and surrounded by an area of open court—predating, but apparently in overall conformance to, examples of the New Kingdom tripartite *Wohnhause* described by Ricke 1932: 25-42).²⁵

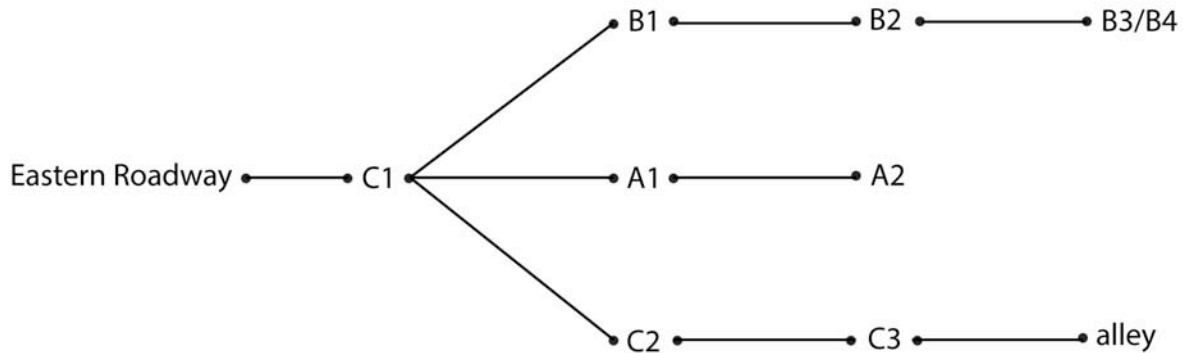


Figure 3.3. Flow diagram of ETH in its earliest phase of occupation (phase 3).

Changes through time: Later-phase alterations (phases 4 and 5). Following the initial phase of occupation the Eastern Town House underwent a number of significant structural alterations. None of these, however, altered the original zoning, which remained consistent. The entrance to the core (zone A), still 0.60 m wide, was upgraded in phase 4 by a threshold lined with five well-squared limestone blocks associated with a limestone door socket (bearing traces of wear) southeast of the threshold, just inside the entrance to space A1 (**fig. 3.4**). This limestone threshold with door socket is the only such example in ETH. That it was chosen to line the single entrance to the core reinforces the private, controlled nature of zone A, and underscores the need for a secure, formal door. Space A1’s floor was resurfaced in phase 4 with an ashy silty clay.

²⁵ “Zones” are to be distinguished from the three components of the tripartite house. For example, zones B and C in the Eastern Town House together constitute Ricke’s open court area where the daily life of the inhabitants largely takes place.

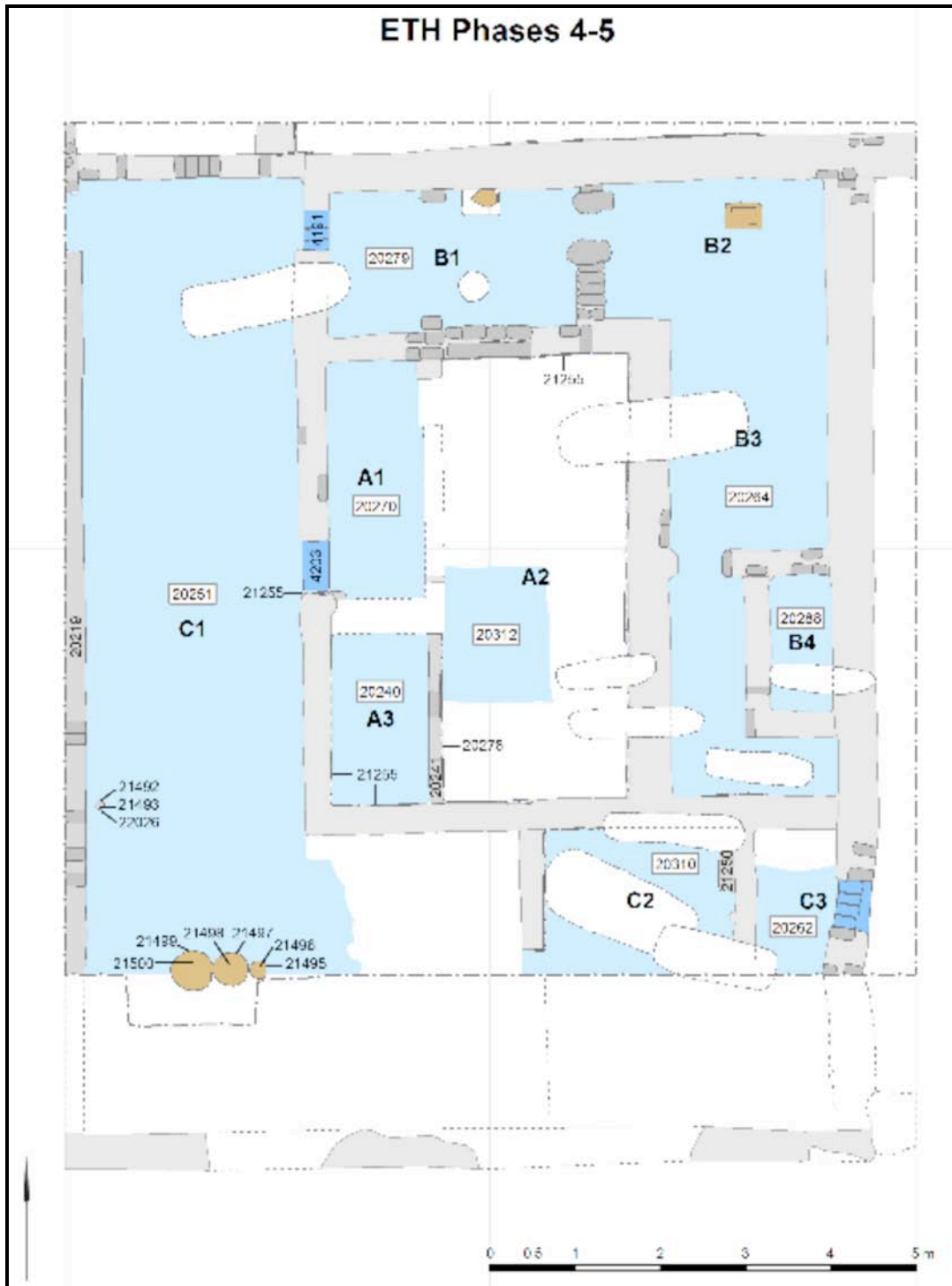


Figure 3.4. Ground plan of ETH in phases 4 and 5 (digitized by Rebekaha Miracle).

The walls of space A2 were re-plastered in phase 4 and a new installation added to the southwest corner—a large, low platform that we designated “space A3,” measuring 2.0 m long by 1.15 m wide. The platform appears to have been constructed from a thin, low partition (0.33

m high and the width of a single 12-centimeter brick), in-filled with a deposit of loose rubble, raising the area within the partition by 0.16 m. The builders then sealed the rubble with a smooth layer of ashy silty clay. According to similar platforms found in the gallery system to the west, it may have been built with an internal segment of bricks for structural support across its width²⁶ (Abd el-Aziz and Jones 2012). Its dimensions and location in the innermost space—the deepest end of access of the core—as well as its resemblance to other examples at our site,²⁷ suggest that the structure is a sleeping platform (Arnold 1989: 83; Lehner and Sadarangani 2007: 81-84, 86). Covered with reed matting, it would have provided a raised “clean” area that could possibly have accommodated two adults. The presence of the sleeping platform confirms zone A’s characterization as a “domestic” core.

It is important to highlight here both the limitations, and the significance, of phasing. Space A2 was part of the house’s original ground plan. The space was built in the shape of an inverted-L, with a recessed southwest corner comprising the foot of the “L.” Regrettably, phasing does not tell us how much time elapsed (days, months, possibly years) before the recessed corner was in-filled to become sleeping platform A3, though we necessarily place that new addition in the subsequent stratigraphic phase. The architecture of ETH may well indicate that the recess, already part of the house’s original design, was intentionally constructed to enclose a sleeping platform.

²⁶ The platform in ETH was left mostly intact; thus the presence of an internal structural support is estimated.

²⁷ We have found sleeping platforms at various locations within HeG: in the “Hypostyle Hall” in the eastern part of the Gallery System (Lehner and Sadarangani 2007: 76); in the central room of Western Town’s House Unit 1 (Kawae 2009: 89-90); in Gallery III.3 (Abd el-Aziz and Jones 2012); in Gallery III.4 (Abd el-Aziz 2007b; Lehner 2002a: 41, n. 17; Lehner and Sadarangani 2007: 76-84); and in rooms F and M in the Royal Administrative Building (*ibid.*: 81-84). In the early 1970s, Abd el-Aziz Saleh found similar bed platforms in houses in the industrial settlement southeast of the pyramid of Menkawre (Saleh 1974: 142, fig. 1, pl. 27a).

Phase 4 also presented the construction of a new west boundary wall located along our western limit of excavation. Significantly, the new wall was erected slightly east of the posited original wall, thereby slightly reducing the square footage of space C1. Future excavation will hopefully show us whether the wall was moved eastward to accommodate the Eastern Roadway; given that the size of the courtyard (C1) was ultimately reduced, the supposition is likely. An access, 0.66 meters wide, was created at the north end of the wall, apparently leading out to the roadway. A similar access, 0.70 meters wide, was created at the wall's south end.

Phase 5 presented in zone C a new floor of slightly ashy clay throughout space C1. Roughly in the southwest corner of the "L" was a rectangular cut that housed three in situ pottery vessels, aligned east-west (**fig. 3.5**), their rims just topping the new phase-5 floor. The cut had been packed with ash, surrounding the vessels and effectively securing them in place: it is apparent the vessels were meant to be stationary rather than portable and to hold items that benefited from the degree of cooling that burying would have provided (perhaps including drinking water?). The excavation of similarly interred jars at North Abydos, as shown in Chapter Two, suggests that the vessels were originally covered or plugged with a sherd or small pot, protecting their contents (Adams 1998: 24). We identified the easternmost vessel as an AB7 jar (a tall, ovoid storage/transport vessel: Wodzińska 2007: 297-298 and figs.11.6, 11.11). The middle vessel was a globular, 20-liter-capacity jar. Missing its rim, it has not been identified. The westernmost vessel was a large 25-liter-capacity pot with a pointed base comprising the only such example found to date at HeG. Two of these jars bore crudely rendered inscriptions.²⁸

²⁸ A highly tentative correspondence has been conjectured between inscriptions on two of these pots and "phyle" names proposed in the work of Ann Macy Roth. Roth suggests that the Old Kingdom royal work force responsible for construction of the Giza pyramids was divided into two gangs, each consisting of four to five named "phyles" (Roth 1991). Lehner (personal communication 2005) has suggested that the inscription on the easternmost jar may be the hieratic form of the papyrus stalk *wꜣḏ*-sign, meaning "green" or "fresh," and may possibly correspond with one of the phyle names (*wꜣḏ*) proposed by Roth



Figure 3.5. *ETH reconstruction. View to northwest: three interred jars in zone C (AERA archive 504533).*

Space C1's phase-5 floor also contained, about two meters northwest of the jar assemblage, a circular pit (0.22 m in diameter by 0.11 m deep) lined with mudbricks, which were in turn lined with clay. The clay was so compact that it appeared to have been baked, suggesting that the pit had contained a localized heat source. This possibility is strengthened by the deposit of loose ash that filled the depression—perhaps in situ residue of hearth activity.

Loosely scattered in space C1 were specimens of red, yellow, and pink pigments. It has been suggested that the presence of the pigments might indicate that C1 was an area reserved for craft activity (Flentye 2007).

A second layer of ash, 0.13 m thick, was laid down in space C2, sealed by a second floor of ashy, silty clay. It is interesting to consider whether the ash layer had been put down as a leveling compound prior to the new floor, or whether it was generated in situ by continued burning in the northwest corner of the room. Elevations showed that, perplexingly, the new floor was set at a height approximately 0.20 m lower than the floors in adjacent spaces C1 and C3,

(1991: 37). On the middle jar's east face was etched what may be a *ms*-sign, or perhaps the hieratic form of the "shoulder knot" *stjt*-sign, which may have an alternative reading of *t3-wer*—yet another possible phyle name proposed by Roth (*ibid.*).

constituting a significant drop. Additionally, a well-squared alabaster block, 0.48 long by 0.28 m wide by 0.07 m high, was present just north of the threshold between C2 and C3, while a broken alabaster chunk was found just to its south. We can only tentatively speculate that the alabaster may have originally comprised a complete series of steps spanning the threshold and easing the differential between spaces C2 and C3. A large intrusive burial in space C2 renders speculation all the more difficult.

In zone B, phase 5 featured a new floor of slightly ashy clay laid down in space B2, spreading southward into B3. The northeast corner of B2 presented a rectangular limestone basin [Object 362] (0.42 m long by 0.29 m wide by 0.17 m deep), set into the new floor (see **fig. 3.9**). The excavator (Hounsell 2008: 27) suggested that the basin was a mortar, in which grain was pounded with a pestle in the threshing process. Middle Kingdom models from the tomb of Meket-Re show examples of this activity performed while standing (Winlock 1955). Space B4's mudbrick lining was topped with a new ashy clay surface in phase 5.

Thus the occupants of ETH performed a handful of structural alterations in occupation phases 4 and 5. It would seem that, concomitant to the building of the new western enclosure wall in phase 4, some upgrading was undertaken: extra attention was paid to the entryway of the domestic core, which received a more formal threshold and door socket (and we can assume a more private and secure door), the walls of the vestibule were newly plastered, and a sleeping platform added to the innermost room of the house. All the zones received new flooring. In space C1, what may have been a "new" access was installed at the southern end of its new west wall. Because of the necessity of extrapolating the original western boundary, we cannot say with certainty whether a second access may have existed in that earlier wall. Assuming for the present that the second entrance was newly added, we can observe that the flow of access was thereby

slightly altered, as expressed in the flow diagram below (**fig. 3.6**). While the house’s zoning remained unchanged, access now flowed more efficiently through the southern stretch of zone C, from the (possibly) new southern entrance in the west wall directly through spaces C1, C2, and C3 to the back alley beyond. We can preliminarily consider that this increased efficiency was a response to increased activities of a crafts-working or industrial nature conducted in zone C. Furthermore we can conjecture that the occupants of ETH chose to increase access to the Eastern Roadway possibly as part of the same response. More will be said on this below.

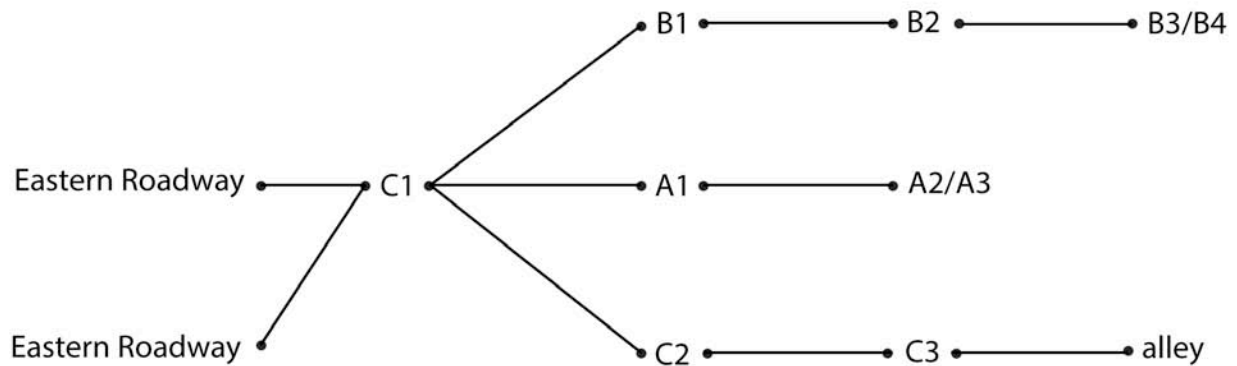


Figure 3.6. Flow diagram of ETH in phases 4 and 5.

Final alterations and occupation (phase 6). The domestic core (zone A) featured a new installation in ETH’s final phase of occupation: in space A2, a new floor of compact ash was first laid down, followed by the construction of a plastered *mastaba* (the Arabic term for “bench”), centered against the phase-4-plastered face of the east wall (**fig. 3.7 and 3.8**). This new structure measured 1.73 m long by 0.50 m wide by 0.25 m high. In much the same manner as the platform in space A3, it was built of a slim (one course of brick) partition retaining a rubble fill, the whole having been covered over with thick marl plaster. At some later point, the *mastaba* was enlarged by the same method—that is, a new partition was made and filled in with rubble, enclosing the original structure and adding centimeters in height as well as length and width. A new marl

plaster facing was then applied. The enlarged *mastaba* measured 2.05 m long by 0.95 m wide by 0.35 m high. While the original dimensions of the structure would support its function as a bench, the enlarged structure, which is only slightly narrower than the sleeping platform in A3, could conceivably have performed a multiplicity of functions (F. Arnold 2015: 151; 1997: 114), perhaps as table, couch, and bed, possibly reflecting the needs of a growing household (e.g., the birth of children). The addition of the *mastaba*—the only such example we have found so far at Heit el-Ghurab—along with the earlier-phase additions of the sleeping platform (A3) and the simple mud bench in B1, calls to mind Paul Oliver’s assessment (1990: 38-39) that pre-modern houses were more easily modified than our houses today: with mud and brick, spaces could be heightened, widened—even molded—into three-dimensional variations to accommodate the occupants’ changing needs (see also Appendix House One, where modest storage compartments are hand-plastered onto the walls of traditional houses in rural Egypt). The use of space, and the space itself, could be changed.



Figure 3.7. Ground plan of ETH in its final occupation phase (phase 6) (digitized by Rebekah Miracle).



Figure 3.8. *ETH prior to reconstruction. View to the north (AERA archive 700744).*

During the house's final stage of occupation, zone A also presented a slightly widened wrap-around wall [20213] enclosing space A1 on the east and south. The new wall was 0.10 m wider than the original wall [4181]. Marl plaster was then newly applied to all the walls of space A1.

Phase 6 exhibited in zone C the addition of an east-west "partition" wall [4196], creating a permeable division at the north end of court C1; the gap between the new partition and the house's west boundary wall is 0.95 m. The new northern division, which we designated "space CB," measures 2.45 m east-west by 2.0 m north-south. Access from space CB flows three ways: southward to C1 through the gap in the partition; eastward through the threshold into B1, and westward through the enclosure wall's entrance to the street (the Eastern Roadway). Importantly, the new space CB fronts the dwelling's northwestern access to the Eastern Roadway. It would

appear that, in erecting the partition wall, the builders intended to increase the level of privacy both in zone A (the domestic core) and in peripheral zone C, for the line of sight from the street was thereby significantly restricted. Conversely, the line of sight from the street into zone B's spaces B1 and B2 was unhindered. It could be estimated that CB functioned as a transitional space, an intermediary zone between the external community (the street) and the house; it constituted, moreover, a second transitional space in addition to the core's vestibule, emphasizing an increased concern with privacy and security.

In new space CB, roughly a meter east of the street access, was a clay-lined circular cut [20255], measuring 0.60 m in diameter and 0.14 m in depth. We speculate that it may represent a robbed pot-emplacement, possibly for a water jar (such as the traditional *zir* found in Egyptian houses today [see Appendix: Houses Two and Four] and for which ancient emplacements have been recorded at Amarna [Kemp 1984: 60-80]). No associated installations or features were present. A water jar placed here would have been a convenient and welcome addition for those entering the house from the outside, whether visitor or inhabitant, and may have been a response to increased (possibly work-related) traffic in zone B.

Proceeding southward in zone C, toward the southwest end of space C1, the phase-5 installation of three jars and associated hearth went out of use and was backfilled and sealed by a layer of compact clay. Just eastward, in the foot of the "L," a layer of marl plaster was added to the floor and also to the space's north and east walls. Like the plaster in adjacent space C2, the plaster here was discolored from repeated substantial heating (possibly the heat generated in C2).

Phase six presented several changes in zone B. Tucked into the southwest corner of space B2 was an in situ CD22 basin [20300] in a circular clay-lined pit in the floor. The pit measured 0.46 m in diameter by 0.42 m deep and was cut so close to the walls cornering the emplacement

that the clay sealant ran onto those walls and the floor nearby. The excavator noted: “the way the lip of the vessel was impressed into the clay suggests that [it was placed] while the clay lining was still malleable to create a good seal between the elements of the installation and the surrounding architecture” (Hounsell 2008: 21-22). Once the pot emplacement had been formed, mud plaster was applied to the corner walls and to the east and west walls of B2’s southern extension, including the walls enclosing space B4. Possibly contemporaneously, the CD22 basin was filled to 0.10 m below the rim with a heavy clay containing mudbrick fragments. Both the clay and the brick fragments were baked through, and the pot’s rim showed evidence of scorching and sooting: it appears that the pot was used as a hearth. The walls cornering the emplacement provided further evidence that heating activity had taken place in situ, for their plaster had turned the indicative deep bluish pink.

Once the phase-six plastering in zone B was completed, the occupants constructed an east-west mudbrick partition wall [20211] that divided space B2 into a northern component, (still) B2, and a southern component, which we designated “B5.” The newly reduced space B2 now measured 2.55 m east-west by 1.53 m north-south; it contained the CD22-hearth and the limestone basin [362] noted above. From space B2 the southward flow now moved through the access in new wall [20211] into new space B5.

Space B5 measured 2.50 m by 1.80 m. Its purpose seems to have been the enclosure of a mudbrick silo, located slightly northeast of the center of the space. Only the eastern semi-circle of what was once a complete circular base, measuring 1.20 m in diameter, survived, and only the first course of brick (0.12 m high) thereof (**fig. 3.9**; and see schematic rendering in **fig. 3.12**).²⁹ Both the inner and outer surfaces of the remaining base were lined with a grayish clay plaster.

²⁹ Felix Arnold mentions the presence of silos even in small dwellings of the lower classes at Kahun (1989: 85; see also Petrie [1890: 24]).

More substantial silos, 2.6 m in diameter, were found at our site in the eastern corner of the Royal Administrative Building (Lehner 2002a: 62-64). Old Kingdom wall reliefs (for example, in room A-12 of the tomb of Mereruka at Sakkara [Sakkarah Expedition: 1938b, pl. 116]) and models (Breasted, Jr.: 1948, pl. 19) inform us that these constructions were cylindrical in shape and topped with a lid. In rural Egypt today rather similar cylindrical silos are found (see Appendix: Figure 46).

Although the silo in B5 seals the phase-5 floor of B2, its stratigraphic relationship to the plastering events and the new wall [20211] is unclear. As a result we cannot be sure whether it was constructed prior to, concurrently with, or following the room division. The meager remains of the silo contained a deposit of mudbrick fragments in ashy, sandy silt. It is not clear whether the ash was deliberately placed here as a deterrent to rodents, as we have seen at the Khentkawes settlement, discussed above. What does appear certain is that securing the household grain, via construction of the new wall, was important. This too we observed in the neighboring settlement of Khentkawes (the walling off of the silos in House E). In Egypt's traditional houses today silos are often kept in secure locations outside a straightforward trajectory of access (see Appendix, Houses One and Three). The proximity of the hearth in adjacent space B2 to the grain storage and processing facilities suggests the baking of bread.



Figure 3.9. ETH reconstruction of phase 6. Facing west: northeast corner with silo footprint (left), limestone basin (right), and ceramic hearth (upper center) (photograph by Yukinori Kawae).

Space B4's internal floor was resurfaced again in phase 6 with a sandy silt deposit, sealed in turn by a new layer of ashy clay, raising the interior of the space by 16 centimeters.

In the final occupation phase of the Eastern Town House, themes of upgrading and increased privacy continued. We also see increased functional specialization, zones A, B, and C being used in specific ways for specific purposes: zone B appears to have been dedicated to grain storage and processing, while some form of household industry was conducted in zone C, while the private domesticity of zone A was maintained. Throughout the house's occupation, the zoning remained unchanged, as can be discerned in the flow diagram below (**fig. 3.10**). The reconstruction of ETH hints at aesthetic details that are lost to us upon excavation (see **fig 3.9**). It is easy to forget that during its occupation the house would have been smoothly plastered and likely painted, and enhanced with textiles and simple wooden furniture that have not survived (Koltsida 2007: 78-79, pls. 41-44).

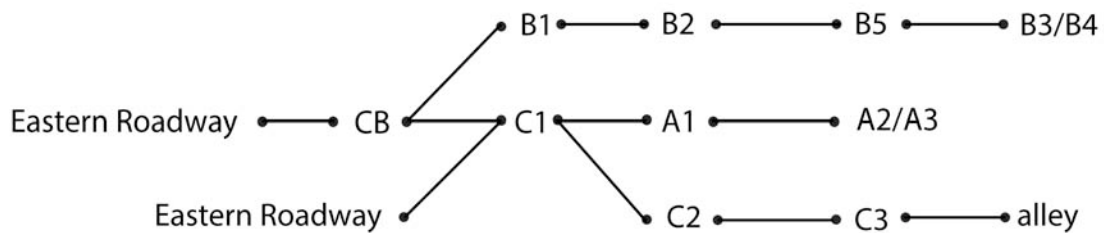


Figure 3.10. Flow diagram of ETH in its final phase of occupation (phase 6).

Ash deposition (phase 7). Sandwiched between the latest floors and the first collapse or demolition deposits were thick (0.30 - 0.35 m) spreads of ash with frequent charcoal inclusions filling space B1 and spilling through the threshold into CB, and filling spaces C2 and the southeast corner of C1. Ash of a different nature, containing 50 percent mudbrick, was found throughout space A2. That ash was present in space C2 and the southeast corner of C1 is not surprising since we know from the extensive scorching of their enclosing walls that burning took place in these spaces. Similarly, ash may be expected in space B1 if the pot emplacement found there is an indication of cooking or heating.

The ash in the domestic core's space A2 is more difficult to explain. The significant percentage of mudbrick contained in the ash indicates that the deposit may derive partly from structural collapse and partly from material brought in (dumped) from elsewhere. Alternatively the ash may have fallen from above the space itself—that is, from the roof. Our lack of evidence prevents us from knowing whether rooftop cooking or heating was attempted. Indeed it may even be speculated that household ash (accumulated from, for example, the daily cleanout of cooking installations) was piled and stored on the roof (see Nolan and Heindl 2011: 9 and back cover illustration), along with piles of other household requirements, such as dung for fuel,³⁰ straw for temper, etc. Quirke assesses that in smaller houses the roofs were, of necessity, used more intensively than were the roofs of spacious houses (2005: 49).

We know that ash was a useful substance. As we have seen above, it was a frequent component of flooring in ETH and was found in association with silos, probably as a deterrent against rodents, at the possibly contemporaneous Khentkawes settlement to the northwest. Mixed with clay it would serve to temper, and smooth the texture of, the flooring compound. Lane records ash as a component of mortar in eighteenth-century Cairo (Lane 1895: 16) and Hug mentions it as a component of roof-surfacing mixture in traditional mudbrick houses of Upper Egypt in the early part of the twentieth century (Hug 1930: 96), underscoring its potential versatility.

Recovered from the phase 7 ash were a number of artifacts: animal bone, including that of sheep, goat, pig, cattle, fish, and bird (Redding 2008), and a total of 62 sealings, three of them bearing the name of Menkawre (Nolan 2007). It is tempting to consider these findings as representative of ETH—as they may well be. However, because the origin(s) of the ash layer is

³⁰ Of peripheral relevance is the German Archaeological Institute's recent finding of ancient dung stored in a 12th-dynasty house at Elephantine (Arnold, F., Budka, and Kobb, et al. 2014: 4).

not known with certainty, it can only be stated that the presence of seals of Menkawre in ETH, even if “dumped,” lend undeniable support to the dating of Heit el-Ghurab to this pharaoh’s reign. Among the other sealings, those of bags, jars, and boxes predominate (Nolan 2007), indicating that the household was obtaining goods from the community. Whether the sealings actually belong to the remains of ETH, they would be indicative of the general neighborhood. The recovered fauna, too, is interesting. According to AERA faunal analyst Richard Redding, the high percentage of pig and goat is indicative of a “non-provisioned” food supply, contrasting with the beef-rich diet supplied to the galleries (see Redding 2008). If the pig and goat bone did originate at ETH, it may indicate that the occupants reared their own animals, or at least were not dependent on state provisioning.

Collapse or demolition (phase 8). Mudbrick tumble filled most of the spaces in the Eastern Town House. The tumble layer comprised approximately 50 percent broken mud bricks in an ashy, sandy silt. In spaces A2 and A3 (in the domestic core) layers of ash overlay the tumble. In space A1, ash overlay one tumble layer and underlay another. As noted above, a phase-7 ash layer was moreover found in A2, effectively “sandwiching” the tumble, suggesting that material was brought in (dumped) from elsewhere, or that ash had come down from the collapsed roof.

The percentage of mudbrick in phase 8 is not substantial enough to allow us to guess whether the house featured a second story. Bricks were undoubtedly removed for employment elsewhere after the house was no longer occupied, and the valuable wooden roof beams would have been pulled out and taken away for re-use. The presence of ash, mentioned above, may neither indicate nor preclude the existence of a second story: as we have seen, thermal activity

may possibly have been conducted inside the house, whether on a first or second floor, or on top of the roof, and ash may possibly been stored on the roof.

Alluvium (phase 9). A layer of alluvial mud capped not only the Eastern Town House but what we know of the eastern extent of Heit el-Ghurab, as mentioned above (Bunbury and Jeffreys 2010: 65-75; Lehner 2007b: 37-39, fig. 19; Lehner 2015 a and b). The flooding of ancient irrigation systems during the annual Nile inundation would account for this. It would seem that the Eastern Town House, the community in which it was embedded, and the Heit el-Ghurab site of which the community was a component existed by virtue of a well-maintained irrigation system.

Cemetery: Intrusive late burials (phase 10). Nine late burials cut through the Aeolian sand deposits, the alluvium, and ETH's complete stratigraphic spectrum to the sterile desert sand below. The burials are estimated to be Ptolemaic/Roman or possibly Christian. All were oriented east-west (Lehner et al. 2009c: 16).

3.2 Discussion

The above detailed description of the Eastern Town House allows the first four research questions to be addressed.

1. Does its ground plan reveal it to be a house?
2. Does its ground plan show us how its space was used and organized? Was form related to function?
3. Does its ground plan reveal change over time?
4. What was its relationship to the immediate surroundings and to the broader context of Heit el-Ghurab? Does its ground plan indicate the socioeconomic status of its inhabitants and thereby add to our understanding of the overall workings of the Heit el-Ghurab site?

1. *Does its ground plan reveal it to be a house?* Analysis of the ground plan allows us to define the structure we call the “Eastern Town House” with great probability as a domestic building: a house. It comprises the basic elements considered necessary for categorization as a house, according to the New Kingdom interpretations of Ricke (1932: 35-42; recapitulated for the Middle Kingdom by F. Arnold [1989: 78-79; 1997: 114]; and as described by D. Arnold (2003: 110)—that is, private, central living quarters (A2) linked to the external community by a transitional space (vestibule A1), and a court or hall where the household members carried out the bulk of their daily activities and probably spent most of their time (zones B and C).

Kate Spence uses the term “liminal” (currently in vogue) to describe the screening area of outer rooms through which one must pass in order to reach interior rooms in houses at Tell el-Amarna (Spence 2010: 292). The implied concepts of privacy and security, and perhaps protection from the elements as noted above, were reinforced by the presence of the vestibule (A1) in ETH. The position of the “front” entrance of the vestibule vis-à-vis the doorway at the northern end of the opposite side of the chamber creates a dog-legged access, a zig-zag (in French, *chicane*), between exterior court C1 and interior living-space A2. This off-axis entry pattern, which we see in other houses at Giza, such as the Western Town House (discussed below in this chapter) and the houses of Khentkawes Town (discussed above, in Chapter Two), lends to the greater privacy of the interior, blocking the line of sight into the internal living spaces. That zone A contains a bed niche in a tucked position at the deepest end of access supports its identification as a private living space.³¹ Indeed the layout of the domestic core

³¹ Edward Lane, writing of Cairo in the early nineteenth century, observed that no household chambers were furnished as bedrooms: “The bed in daytime is rolled up and placed on one side or in an adjoining closet. . . . In summer many people sleep upon the house-top” (1895: 28). Extant wooden beds such as that of 4th-dynasty queen Hetep-Heres (Reisner 1955: 32-33. Pls. 25, 26), and evidence of permanent installations such as the sleeping platform, indicate that in ancient Egypt at least sometimes space was dedicated to sleeping. Why evidence of definitive “bedrooms” is not always apparent in Old Kingdom

conforms to the ancient Egyptians' conception of "house," specifically "domestic house," reflected in the shape of their hieroglyph "h" (𓇨) in its ideographic use (*pr*) (F. Arnold 2001: 123; Badawy 1958: 122).

In contrast to zone A, peripheral zones B and C, which present evidence of food-preparation and industry, suggest that we can apply retroactively Lozach's observation that traditional houses of the Delta in the early twentieth century were conceived of as a shelter—a place to house people, animals, and tools—while most activity took place outside in the open (1930: 31).

2. *Does its ground plan show us how its space was used and organized? Was form related to function?* Examination of the ground plans, supported by the associated access diagrams, exhibits that ETH had three spatially and functionally specific zones, A, B, and C. As detailed above, zone A, the domestic core, with its *mastaba* and sleeping platform, was apparently dedicated to "clean" activities and sleeping. Moreover, the recessed area in A2 shows, in all likelihood, the intentional use of the space to enclose the sleeping platform. Zone B is the most functionally complex area of the house. The presence of a well-defined hearth, grain silo, possible grinding space, and possible mortar would indicate that its primary function was the production of bread. Zone C appears to have been used for food preparation, craft-related activity, and unknown activity, probably of an industrial nature, that required significant heating.

3. *Does its ground plan reveal change over time?* Analysis of phasing, as indicated through the corresponding ground plans, reveals that ETH underwent a succession of significant changes. Zone A appeared to have been well taken care of: the walls had been repeatedly plastered and the floors resurfaced, its entrance was upgraded with a limestone threshold, and

houses is an open question, perhaps answered by the economic means of the occupants. Lane's observation above, I would offer, may reflect the intervening influence of nomadic Arab culture.

judging from the absence of occupation debris between floors, the floors had been regularly swept clean, evoking Paul Oliver's assessment (1990: 38-39), noted in Chapter One, that traditional houses require consistent upkeep and repair. Its acquisition of both a (possibly multifunctional) *mastaba* and a sleeping platform suggest that the occupants of ETH accommodated a growing family. It is relevant to note that in the early 1990s, as an inspector with the Supreme Council of Antiquities (now the Ministry of Antiquities) at the "Workers' Cemetery" west of Heit el-Ghurab, I excavated numerous burials that included women, children, and infants, indicating that families may have lived, if not in the gallery system, in at least some parts of HeG, such as the Eastern Town.

The house's new western enclosure wall, with its two entrances, was apparently a far-reaching change. Following its construction, a partition wall was added, creating new space CB at the house's north entrance. The new space effectively screened off the domestic core in what may have been a strategy to maintain the household's privacy and security in the context of increased industry and related traffic, which in turn may have prompted floor re-surfacing events, in peripheral zone B. A pot emplacement in the new space may (conjecturally) indicate the addition of a water jar, placed for the convenience of incoming workers or delivery personnel. The heat-related activities conducted in zone C were apparently accommodated by the new wall's efficient southern access straight through to the back alley.

An analysis of how the house changed over time is complemented by acknowledgment of the features that did not change. In the peripheral zones of the house (zones B and C), it appears that work-related activities were pursued from the earliest phase of occupancy, presumably indicating that the Eastern Town House was designed to support those activities. Space C2, for example, where thermal operations were conducted, was not added at a later phase: the

stratigraphic profile shows that the space was created with the intent to enclose intense heat at the time the house was built. The presence of space B4 (a possible grain-grinding space) from the first occupation phase is itself not surprising. More meaningful is the addition of the silo and its deliberate enclosure in new adjacent room B5, indicating a possible increase in bread-baking activity (to feed a growing family?). We may extrapolate that the Eastern Town House, while being a dynamic household, was invested with intention, a concept further explored in response to the question below.

4. What was its relationship to the immediate surroundings and to the broader context of Heit el-Ghurab? Does its ground plan indicate the socioeconomic status of its inhabitants and thereby add to our understanding of the overall workings of the Heit el-Ghurab site? The surrounding context of the Eastern Town House has not yet been excavated. Lacking ground plans of neighboring structures, whether they be walls, streets, large buildings, or houses, what can be said at this point is that the overall dynamic of ETH, as reviewed above, is that of upgrade. Physical improvements to the house, an increase in the number of spaces in the house (though not an increase in actual house size) from seven at initial occupation to nine at final occupation, and a possible increase in work-related traffic that in turn necessitated increased control of access to, and movement through, the peripheral zones B and C all point to a general improvement of the economic status of ETH's occupants. Faunal evidence suggests that the household was not provisioned, as were the residents of the gallery system to the west, indicating a measure of economic independence. The bag-, jar-, and box-sealings (whose interpretation must be made with caution, given their context in the ash-deposition layer) may show an economic relationship with the surrounding community of Heit el-Ghurab. These sealings would have been affixed to products produced beyond the premises of ETH. For that reason, it is

implied that the household itself offered something in the exchange—presumably the (unknown) items produced in zones B and/or C.

West of the Eastern Roadway, sandwiched between the gallery system and Eastern Town, lies an apparently industrial area known as EOG (“East of the Galleries”), where scattered evidence of pigments has been found among the debris (Lehner et al. 2009a). It is possible that there is a correspondence between the pigment evidence in ETH’s space C1 and the pigments found in EOG (Flentye 2007; Lehner et al. 2009a), pointing to a product the household may have been manufacturing and supplying to the Heit el-Ghurab community or to the monumental operations on the Giza Plateau. The Eastern Town House is situated facing the Eastern Roadway; its two western entrances provided it with maximum access to regions west. Perhaps this orientation supports a work-related involvement between its occupants and the industry in EOG. That the house was built with work-related intent from the beginning may corroborate the town’s *raison d’être* as a support mechanism for the royal monument construction to the northwest, and the Eastern Town House’s role as a unit of production within that mechanism.



Figure 3.11. ETH reconstruction: view to the northwest (AERA archive 805680).

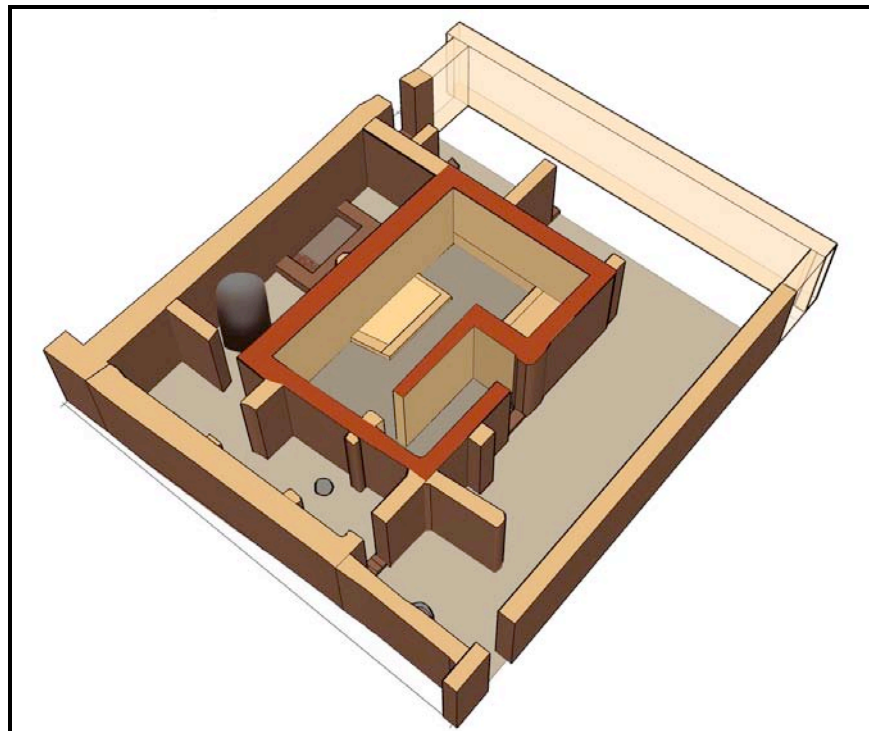


Figure 3.12. 3-D image of ETH rendered from the excavation data; view to the southeast (by Wilma Wetterstrom).

The Western Town House (WTH)

. . . I have built a house, set up (its) doors, I have dug a pool, planted sycamores. . . .

from the *Autobiography of Harkhuf*, inscribed in his tomb in Aswan; 6th Dynasty; translation by Lichtheim (1973: 24)

. . . (and with) a walled estate 200 cubits long and 200 broad, set out with fine trees, and a large pool made in it; it was planted with fig trees and vines. . . . A garden was made for him . . . within the enclosure, which was planted with trees. . . .

from Metjen's Fourth Decree, establishing his estates; inscribed in his tomb in Saqqara; early 4th Dynasty; translation by Strudwick (2005: 193)

A popular soccer field belonging to the neighboring community of Nazlet el-Simman is situated in the southeast region of AERA's concession, directly south of the gallery system and southwest of Eastern Town. In the early years of the new millennium, ground-penetrating radar soundings revealed glimpses of walls beneath the playing field (Dash 2009). The Egyptian Supreme Council of Antiquities (now the Ministry of Antiquities) recommended in 2003 that we (AERA) open test trenches immediately west of the sporting grounds to verify the presence of ancient architecture and thereby convince the local authorities that the field should be moved. To this end I supervised the digging of two trenches, widely distanced, one off the field's northwest corner and one off the southwest corner. AERA director Mark Lehner described the initial results of the trenching: "As soon as the overburden was lifted . . . ancient plastered walls appeared, enclosing rectangular rooms, a courtyard . . . and a small bin. The organization appears to be more regular than in the Eastern Town . . . with a more formal layout" (2003: 6). While the effort to move the soccer field ultimately proved unsuccessful, we now had confirmation that our site extended at least 150 meters further southwest than we had previously known. The test trenches had revealed the first glimpse of the first house in the ancient community we later dubbed "Western Town."

In the following (2004) season, AERA excavators, directed by Mark Lehner, surface-scraped and mapped a significantly large exposure of 60 m east-west by 200 m north-south, west of the soccer field, displaying a vast maze of mudbrick walls, some intersecting at right angles, and some substantially thick (**fig. 3.13**). The architectural footprint here presented neither the rigid orthogonal structure of the gallery system nor the informal, organic layout of Eastern Town—that is, it was more regularly laid out than Eastern Town but less so than the gallery system. Within the maze we discerned the patterns of at least three fairly large discrete units—probable houses. The westernmost of these, designated “House Unit 1,” was preliminarily investigated by AERA archaeologist Yukinori Kawae. Excavation is intermittently ongoing; findings thus far are published in Kawae (2009) and Sadarangani and Kawae (2011).

Fifteen meters east of House Unit 1 lay a second probable domestic structure, which we dubbed the “Western Town House” (WTH).³² In the spring and fall of 2005, I undertook its excavation, under the direction of Mark Lehner, with the assistance of Freya Sadarangani, Anies Hassan, and AERA Field School graduate Hanan Mahmoud, who participated in compiling the field report (Mahmoud 2009). Excavation was conducted using the Museum of London Archaeological Services’ single-context recording system. On file with AERA are the specialist reports of Dr. Anna Wodzińska (ceramics), Tim Stevens (lithics), and Dr. Richard Redding (fauna). The excavation of WTH is presently unpublished but for a brief summary in Lehner, Kamel, and Tavares (2006: 73-75). Approximately 30 meters southwest of the Western Town House a third probable dwelling awaits excavation, and tentative identifications of additional dwellings in Western Town have more recently been made (see **fig. 3.13**).

³² The house’s name has evolved over time. It has variously been designated “House Unit 1” and “House Unit 3.” Field data feature these earlier incarnations.

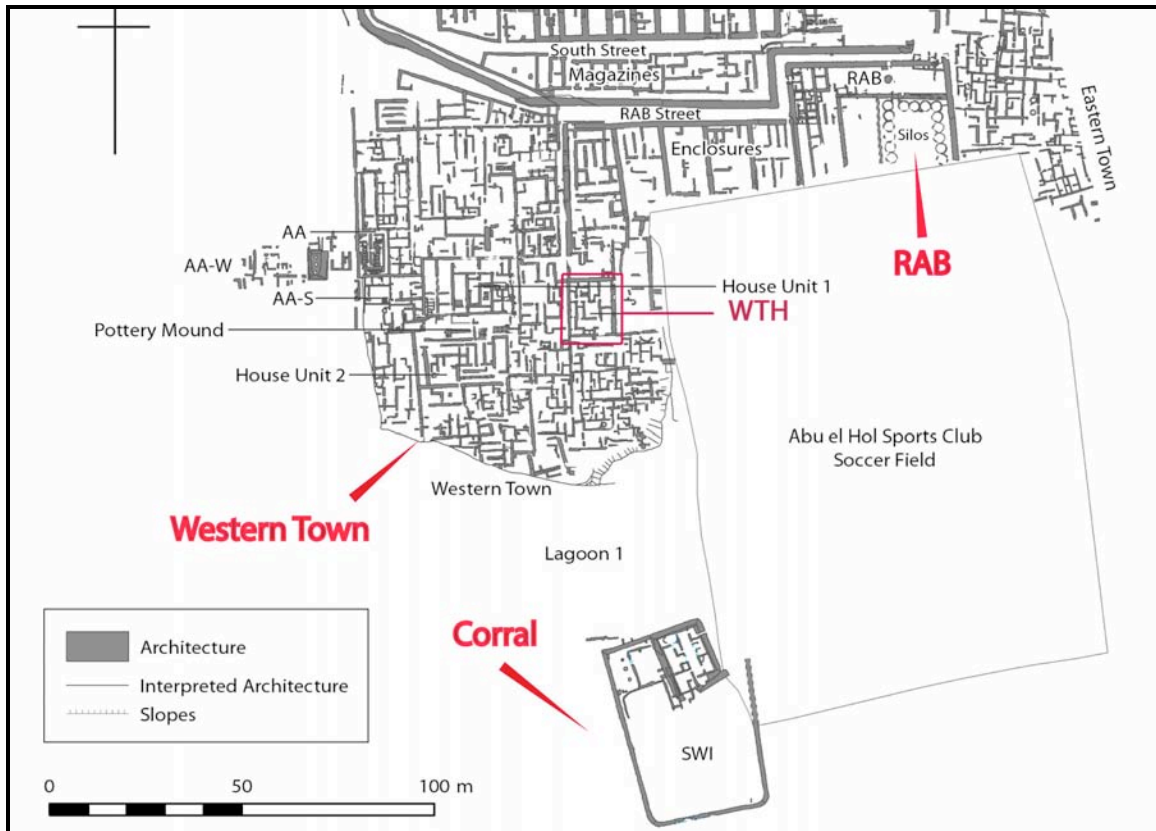


Figure 3.13. Exposure of Western Town as of 2015 (digitized by Rebekah Miracle).

The excavation of WTH spanned grid squares 6.G9-11, 6.H9-11, 6.I9-11, and 6.J9-11. Changes to the topography of the Western Town area in general were wrought by its use as an encampment of the British army during the early nineteenth century (post-holes from their tents are still visible), while in the last century horses were commonly trained there, and sand was mined with front loaders and backhoes. Perhaps ironically, the gouging by these heavy machines afforded glimpses of the house's stratification. Today watering of the nearby soccer field, along with rising ground water, continues to warp the mudbrick walls (Lehner et al. 2009c: 41-42).

3.3 The Life-cycle of the Western Town House (WTH)

The Western Town House presents a notably brief and straightforward stratigraphic narrative consisting of preconstruction and construction (phases 0 through 2), initial occupation

(phase 3), and remodeling events with final occupation (phase 4), followed by collapse of the walls (phase 5), and concluded by mud mass covered with a thin layer of alluvium capped by Aeolian sand (phase 6). The house appears to have been founded on relatively sterile desert sand featuring no previous architecture. No burials were present.

Four walls enclose the rectangular building, rendering it a discrete structure of 16.0 m north-south by 12.4 m east-west, or 198.4 m²—nearly twice the size of the Eastern Town House (101.92 m²), explored above. The west and south walls, composed of sandy mudbrick (the most commonly occurring brick type at Heit el-Ghurab [Abd el-Aziz 2008]) and occasional marl bricks with occasional fragments of limestone, are substantially thick, measuring 0.6 m. The north and east walls stand out for their limestone-block construction and perplexing thickness of 1.1 m. A roughly 2.0-m portion of the south wall (toward its east end) was gouged out by the abovementioned backhoe activity. The internal walls, all of sandy mudbrick, ranged in width from 0.4 m to 0.5 m. Unfortunately, both the external and internal walls were preserved to a height of only 1.0 cm to 4.0 cm, having been nearly eradicated by erosion and modern depredations. The east side of the structure showed the least preservation. Throughout the building yellowish marl plaster coated the floors and lipped up onto the minimal remains of internal walls, indicating that they too had been plastered.

We found no discernable architecture bordering WTH's east side. The ground there was revealed to be a prepared surface of crushed limestone,³³ indicating that the house was positioned along a possible north-south street, while to the north, south, and west is fragmented evidence of comparatively thin walls. Excavation of the surrounding context will hopefully enlighten us as to

³³ "Main Street," which is a large thoroughfare located in the gallery system to the north, also exhibited a 10-cm-thick prepared (or, to use the British term, "metalled") surface containing crushed limestone (Abd el-Aziz 2007a: 121).

how WTH relates to Western Town, in which it is embedded, and to the broader environment of Heit el-Ghurab.

Although no roofing material has survived from WTH, we can assume it was topped with a wattle-and-daub roof, mud impressions of which were found 15 meters to the west, in House Unit 1 (Lehner et al. 2009a: 34-35).

A walkthrough of the earliest phase of occupation (phase 3). The Western Town House comprised, at all phases, 15 spaces arranged around a nearly square open courtyard (cf. the Eastern Town House which, at its latest phase of occupation, displayed 9 spaces) (**fig. 3.14**). While the house lacked clearly demarcated zones, such as those visible in the Eastern Town House, it did present regions that can be broadly characterized in terms of their function (that is, they each had a functional identity). In the northeast, a vestibule with pilasters comprised the (single) entrance, which connected directly into an apparently industrial (stone-working) space; the western half of the building featured chambers suggestive of cooking, baking, and grain storage; while the southern half contained relatively secluded spaces that were likely private living quarters. For all intents and purposes, these three “function blocks” are zones. Moreover, they are represented in the architecture by their respective accesses off the central courtyard, as will be explored below.

The damage caused by backhoe activity rendered the initial location of entrances difficult and confusing. We ultimately identified a single entrance of 0.78 meters in WTH’s northeast corner, in the limestone east wall. From here, access flows into space “P,” a long, north-south oriented entry-room—a vestibule—of 7.0 m by 2.75 m, featuring a niche defined by two thickly plastered pilasters at the room’s southern end. Given its location in the vestibule, just three meters from the entrance, this niche was no doubt intended as a formalized space where the

master of the house would receive visitors (see Kemp 1989: 294, fig. 99; Arnold 1998: 13; and discussion of the “audience hall” in Lehner 2015 a and b). The intact plaster on the pilasters substantiates that the structures were in fact pilasters and not the broken remnants of a wall or partition. Access from the entrance turns southward ninety degrees, in the familiar doglegged trajectory, to an opening (0.60 m wide) in vestibule P’s southwest corner. In addition to creating a measure of privacy, as we have seen, for example, in the entry-way of the Eastern Town House, this off-axis entry also afforded security: a visitor would be obliged to pass the owner in his niche before proceeding further into the house (reiterating Quirke [2005: 59-60]: thereby creating a sense of physical disorientation and psychological dependency in the visitor).



Figure 3.14. Ground plan of WTH in the earliest occupation phase (phase 3) (digitized by Rebekah Miracle).

Passing through the southwest opening in vestibule P, access flows directly west into space “O,” a featureless rectangular room of 5.0 m by 2.0 m. From here, access flows southward through a doorway into (nearly) square space “H” (4.25 m x 3.75 m), which we identified as an open courtyard by the impression of an ancient tree-bole (i.e., the imprint of what had once been the roots and trunk of a tree) in its direct center (**fig. 3.15**). The floor of the courtyard was uniformly plastered up to the cut of the bole with the same yellowish marl plaster we found throughout the house, lending a degree of refinement to this open space. The plaster was scorched in a circular area (0.25 m in diameter) in the courtyard’s northwest quadrant, indicating a robbed pot-emplacement, most likely for a shallow ceramic vessel holding coals in what may be an ancient version of an outdoor “barbecue” (discussed below). The tree bole measured roughly one meter in diameter and presented tree-root impressions tunneled into the natural sand below. We are reminded by it of Metjen’s description³⁴ of his tree-planted garden, and of depictions of tree-shaded courtyards of the Middle Kingdom, as represented, for example, in the miniature models from the tomb of Meketre (Winlock 1955: 19, pls. 9 and 12). It is significant that the courtyard of the Western Town House allows us to apply this Middle Kingdom epitome retroactively to the Old Kingdom.

³⁴ In his fourth decree, early 4th Dynasty, from his tomb at Saqqara; translated by Strudwick (2005: 193).



Figure 3.15. *Western Town House excavation: View to the west, with tree bole (upper right) (AERA archive 805152).*

Space H was further distinguished by its double-tiered doorjamb in the north, accessing, in addition to space O on the northeast, rectangular space “E” on the northwest. This decorative rather than functional element would have served to formalize the courtyard. Significantly, a third access is just perceptible in the courtyard’s damaged southeast corner, rendering space H a true central hub from which each region, or “function block,” of the house could be accessed.

Access flows northwest from courtyard H through an opening (0.68 m) into “E,” an east-west-oriented rectangular space measuring 2.80 m by 1.25 m. Through an accident of preservation it bears remnants of a black dado that probably originally adorned all the walls of the house. Dieter Arnold’s generalized description of ancient Egyptian houses features the black dado (2003: 110; Dados sometimes decorate the walls of rural houses in Egypt today: see, for

example, Appendix: figs. 25, 26.) Space E appears to have served a transitional function, having three additional doorways, all leading to spaces associated with food and cooking.

Access flows through a 0.5-meter-wide doorway in E's northwest corner into a squarish silo room (space "B/C," measuring 2.0 m by 2.20 m), where a set of badly damaged "pedestals" lines the south wall. These are simple alignments of short (25.0 cm), separated stacks of mudbrick upon which we estimate silos were kept (Lehner et al. 2009a: 35, 65-69, figs. 19, 65-69). Raised off the ground, with air circulating through the gaps between the stacks, the silos and the grain they held were protected from mold-producing moisture. In this example, the pedestals comprise three stacks of plastered mudbrick, compartmentalized to hold two silos. The prominent doorjambs lining the entrance to space B/C indicate the silos were firmly secured.

A similar but better preserved set of pedestals of the same apparent capacity (measuring 25.0 cm high x 66.0 cm deep x 88.0 cm wide), has recently been discovered in a newly identified house 40 meters west of WTH (Sadarangani 2015). Such household-capacity pedestals contrast markedly with larger "industrial" versions, equipped to hold several silos, found east of the gallery system (Lehner et al. 2009a: 35, 65-69, figs. 19, 26-30) and in the "Pedestal Building," about 40 meters northwest of WTH (Lehner 2009b: 65-69, figs. 26-29). While the socio-dynamics of provisioning at Heit el-Ghurab are beyond the scope of this study, the presence of household-capacity silos, such as that found in the Eastern Town House (above) and the ones we can infer in WTH, may support the identification of a structure as a "house" inasmuch as a house necessarily includes a space to store food as well as prepare it, whether or not the food originates through provisioning. In contrast, no silos have been identified within the communal housing system of the galleries to the north.

At the west end of space E, a limestone pivot socket indicates a two-way door: the socket is (apparently deliberately) positioned so that it could have served either space “D,” directly to the west, or space “G,” directly to the south.

The western opening, into D, measures 0.64 m. From here access flows north through this rectangular space (2.60 m north-south x 1.30 m east-west) into L-shaped space “A” (approximately 2.30 m north-south by 2.0 m at its greatest width) at the northwest corner of the house. No features remain in these northwestern rooms. Space A is bordered on the east by the barest traces of a thin wall, on the other side of which is “S,” an east-west oriented space measuring 2.30 m by 1.20 m. As we could find no point of entry into S, the nascent wall separating it from space A may possibly indicate a low partition housing a grinding place, an example of which we saw in space B4 in the Eastern Town House, above (see **fig. 3.2**). The direct proximity of the silo room (B/C) on the south would certainly lend support to this conjecture.

In space S the flow stops, requiring one to backtrack through spaces A and D to return to E. At space E the flow proceeds southward, either into the central courtyard, as noted above, or through a doorway—perhaps the two-way door—into a curiously small space, “G,” measuring only 1.50 m by 1.0 m. Here, too, we found no extant features. Our only clue to the possible function of this nearly closet-sized space lies in the recognition that access from it flows westward through a 0.75-meter-wide doorway into a succession of linear spaces (“F,” “J,” and “L”), all of which were associated with food preparation. Perhaps space G served as a kind of “food depository,” where prepared food was handed over by a kitchen cook to a waiting servant who would carry it forth to the household.

Conjecture aside, evidence for cooking in narrow space F (3.70 m north-south by 1.30 m east-west) is clear. Ash deposits covered the plastered floor. In the northwest corner, a shallow circular pit [24640], 0.50 m in diameter and 0.30 m deep, showed signs of scorching, as did the wall faces against which it was placed. Most likely this was the emplacement for a shallow ceramic cooking vessel. Although the vessel no longer remains, anciently it would have been a permanent installation set into the floor of this “kitchen” space. Filled with fuel (coals, straw, dung), it would have performed much like the ceramic braziers employed in rural Egypt today (see Appendix, fig. 28). We found a similarly scorched circular pit [24606] (0.64 m in diameter) tucked into F’s southwestern corner. Here, too, the brick of the surrounding walls had been burnt. Two intact bread molds and numerous bread mold fragments littered the space. It appears likely that the primary function of F was bread-baking.

From space F the flow continues southward, through a 0.5-meter-wide access into a similar linear space, “J,” measuring 3.0 north-south by 1.0 m east-west. A circular depression measuring 0.36 m in diameter and 0.08 m deep in the northwest corner may have held a vessel roughly the size of a CD22, an example of which was found in the Eastern Town House. The absence of associated evidence of heating or scorching may indicate that the vessel held water, functioning much like a kitchen sink. A meter further south, in contrast, we found two large patches of burnt soil and ash—apparent hearths—in one of which was a bread mold, possibly in situ.

Access from J continues to flow southward, through an opening, 0.60 meters wide, into an east-west-oriented space, “L,” measuring 3.0 m east-west by 1.40 m north-south. Here a large hearth in the southwest corner dominates the space. The semicircular cut [23029] features a radius of 0.78 m and a depth of 0.12 m. The wall-faces of the surrounding corner were scorched

red, while the ashy deposit within the hearth contained animal bone, pottery fragments, and charcoal. A layer of silty ash covered most of the floor of the space, which most certainly functioned as a cooking area. Lithics recovered from this space were recorded as being “of high quality” (Stevens 2005). Faunal analysis revealed “a better diet than most” (Redding 2005), containing a high percentage of beef and sheep bone, with a minute percentage of wild taxa (addax and hartebeest), which would indicate that the occupant of the house enjoyed the luxury of hunting for sport. The flow stops here in space L. To exit, one must backtrack through spaces J, F, and G, all of which indicate a cooking-related function. It is relevant to acknowledge the narrow, constricted dimensions of these “kitchen” rooms. They are, on average, only one meter wide. The presence of solid roofing over these spaces, which must have become hot, smoky, and stifling when cooking or baking was in progress, is unlikely.

Back in the central courtyard (H), the flow resumes through an access in the southeast corner into a spacious tee-shaped area, “K.” Space K measures 6.0 m east-west, by 2.0 m north-south, by 4.0 m north-south in the extension of the tee. At this earliest occupation phase we found no features in the space. In the northwest corner a point of access (0.70 m wide) leads into a north-south-oriented linear space, “I” (3.20 m x 1.40 m), where the flow is stopped by a thin wall separating the space from G, to the north.

Backtracking to K, we assume access flowed through an entrance in what was once K’s southeast corner—gouged out by the backhoe—into space “Q,” where the flow again stops. Space Q is shaped like an inverted L. But for the foot of the “L,” the space’s dimensions (7.0 m x 2.60 m) nearly match those of P, just to the north. Like P, space Q also seems to have had pilasters at its south end, although only the eastern one remains (we extrapolate a western counterpart). The pilaster(s) here, however, in contrast to those in P, define the south end of Q as

a semi-enclosed, secluded space that may have been used for sleeping. Its measurements are 4.25 m by 1.10 m.

Proceeding out of spaces I or Q, then, one must necessarily pass through K, in what Hillier and Hanson describe as a pattern of “non-distributed” access (1984: 14). Such a pattern exhibits a single access in or out of a space and signifies a measure of control over that space (cf. Chapter 2.1: Elephantine “House A”). When the occupants of the house closed the doorway leading from courtyard H to space K, the entire southern region of the house, encompassing spaces K, I, and Q, would have been rendered private and controlled, suggesting that this region constituted a zone of living quarters. The flow diagram below (**fig. 3.16**) lends visual expression to this patterning and aids in bringing into clearer focus what we see on the ground, and in the ground plan.

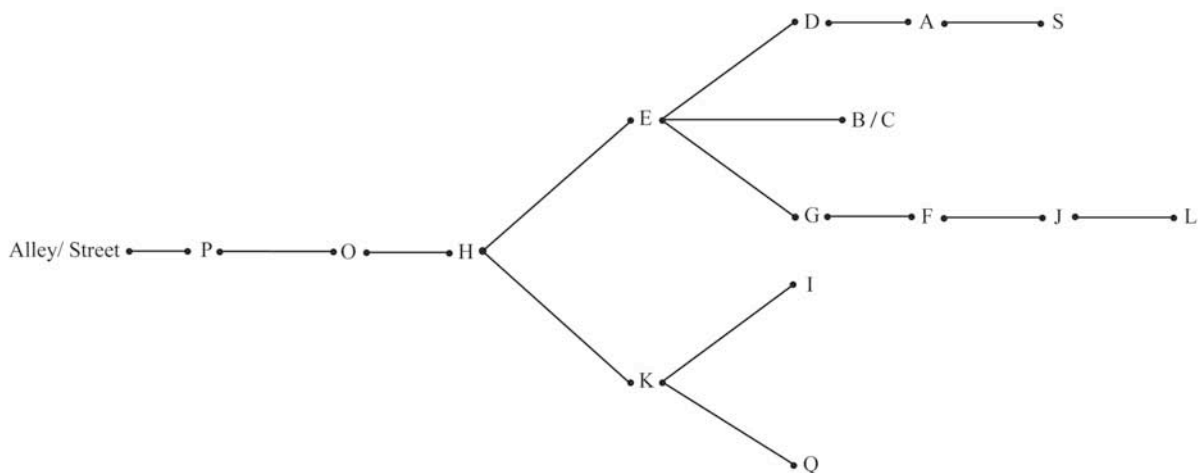


Figure 3.16. Flow diagram: WTH showing three distinct zones in its earliest phase (phase 3) (by author).

Similarly, a closed doorway from courtyard H to space O (and by extension, to vestibule P) would have divided the northeastern “public” zone from the rest of the house, preserving the peace and privacy of the household, as would a closed doorway from H to E and the (perhaps noisy/smoky) kitchen quarters beyond. The three points of access from courtyard H thus appear to link form with function, the courtyard constituting a hub at the center of three “function

blocks,” or zones, that composed the Western Town House from its earliest phase of occupation (see **fig. 3.16**).

Change over time: later modifications and final occupation (phase 4). The Western Town House was minimally altered over time (**figs. 3.17-3.19**), presenting only two phases of occupation. The alterations that were made, however, were significant, pointing to general upgrading and possibly to the identity of the occupant’s profession. We found that, after its initial occupation phase, the entire house acquired a thick (3.0-5.0 cm), dense, alluvial mud floor, topping the initial flooring of marl plaster. It may be possible that the earthen floor was installed in preference to the plastered one because of its durability. A marl-plastered floor, though aesthetically pleasing when freshly applied, would soon crack and crumble when walked upon. In roughly the northwest corner of space A, we found a shallow, circular pit, lined and partly filled with dense alluvial mud matching that of the new floor. This was likely a levigation pit employed when the floor was applied, after which it was simply covered over. We have found similar levigation pits elsewhere at HeG. In one example, a footprint and finger swipe marks left by the last person to use it are clearly visible (Abd el-Aziz 2007a: 118-120, figs. 5.9 and 5.11).



Figure 3.17. Ground plan of WTH in its final occupation phase (phase 4) (digitized by Rebekah Miracle).



Figure 3.18. Western Town House excavation: Phase 4: View to the northwest (AERA archive 805151).



Figure 3.19. Western Town House excavation: View to the southeast (AERA archive 805158).

We found that the short section of north-south wall separating S and O had been removed in this later phase of occupation, merging the two spaces into an enlarged, inverted-L-shaped space O. In the eastern part of the space we found a significant deposit of granite flakes and granite dust covering an area of 1.60 m by 0.60 m upon the alluvial mud floor, and banking up against the space's east wall. Red granite and blue-gray granite, both exotic (non-local) stones at HeG, probably originating in Aswan (Aston, Harrell, and Shaw 2000), were indicated in the deposit. A robbed pot-emplacement (0.50 m in diameter and 0.26 m deep) penetrated the floor where the earlier section of north-south wall had been. Filling and spilling over the pot-emplacement was a charcoal-rich ashy deposit that had partly turned silver, an indication that considerable sustained heat had been produced in the space (Misra, Ragland, and Baker 1993). As heat-fracturing can be employed in stone work (Heldal and Storemyr 2015), it appears that newly designed space O (with subsumed former-space S) may have been modified into an area of granite working. Whether former space S had indeed been used for grinding grain, it appears that new demands related to granite-working became a priority. Significantly, the presence of an imported hard stone such as granite may tentatively indicate that the occupant of WTH enjoyed a measure of wealth and status.

The southeast corner of O also showed changes. Two short, intersecting walls, one east-west and one north-south, were added there to create a small transitional space separating vestibule P from space O. The new space, which we designated "R," measured 1.30 m by 1.0 m. From R's southwest side, a 0.60-meter-wide doorway with limestone pivot socket, worn with use, opened into O. The addition of the new space with secure door suggests that the occupant(s) of WTH wished to restrict access to O, as shown in the flow diagram below (**fig. 3.20**), perhaps to contain the granite dust, smoke, and ash generated within, and perhaps also to safeguard what

may have been valuable stone and/or items made from stone (e.g., statuary) kept there. Space O seems to have been officially rendered a (stone-) work area, separated physically and functionally from the rest of the house. We have reason to wonder whether WTH may have been the house of a master stone-mason associated with the monumental construction projects conducted on the Giza Plateau.

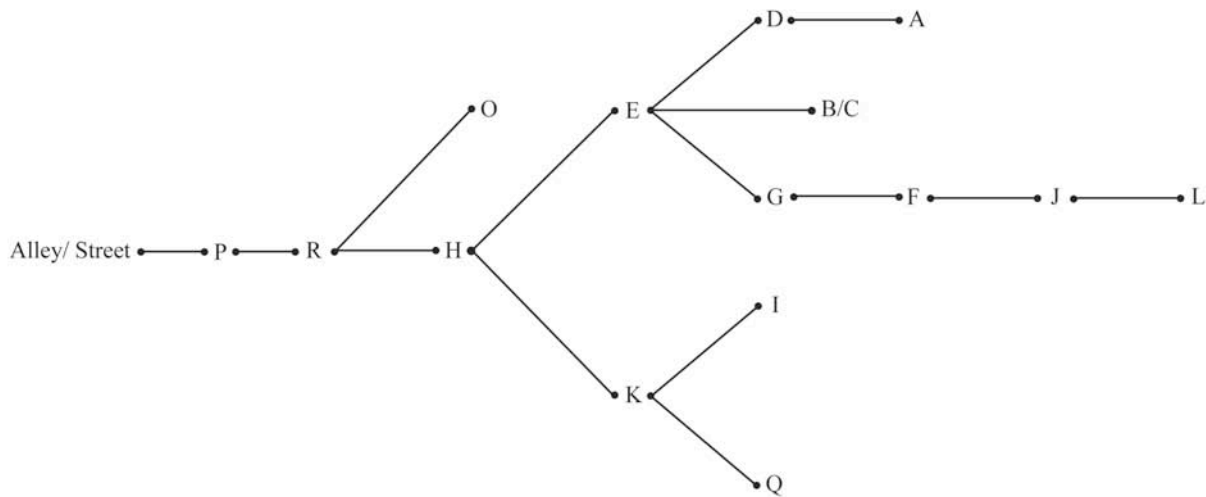


Figure 3.20. Flow diagram: WTH in its final occupation phase (phase 4) (digitized by Rebekah Miracle).

The west wall of kitchen-space F received protective reinforcement in this later phase of occupation. A “skin wall” (that is, a single line of bricks) was added along the original wall’s base, where heat generated from baking had affected the integrity of the brickwork.

In space K we discovered an addition that supports its inclusion in a zone of private living quarters. A 12.0-cm-high mudbrick platform now nearly filled the recess at the south end of the space, which we now designated “M.” Measuring approximately one meter wide and two meters long, and tucked into a semi-enclosure at arguably the farthest recess of the building, it would certainly qualify as a sleeping platform, similar to that found in the Eastern Town House. The platform was rendered with the same mud plaster that had been applied to the floors, indicating that it may have been installed as part of the same later-phase remodeling event.

Excavation revealed that the platform was built with the structural support of a middle line of bricks on either side of which was a rubble fill. This same mode of construction was employed in sleeping platforms found in the gallery system (specifically Gallery III.3: Abd el-Aziz and Jones 2012), and also in the *mastaba* found in the Eastern Town House, discussed above. Significantly, platform M was built into a recessed area original to the house's construction, in the same way as sleeping platform A3 was built into the recess of space A2 in ETH. Here, again, we have a likely indication of the intentional use of space.

Collapse of walls and alluvial mud layer (phases 5 and 6). The abandonment of WTH and the collapse of its walls is represented by a layer of mud mass consisting of decayed mudbrick, capped by a comparatively thin (2.0-3.0 cm) layer of alluvial silt, topped by Aeolian sand. The alluvial silt layer exhibited here is significantly thinner than that of the eastern regions of our site. Preliminary evaluation of sealings evidence recovered from this layer indicated fragmentary impressions of document seals and one fragment of a cylinder seal, all of which are suggestive of an administrative origin (Alexandra Witsell, sealings assistant: personal communication 2004). No ash layer was present, in contrast to that found in the ending phase of ETH; it is worth conjecturing whether this may indicate the presence of a second story, or perhaps the lack of need, in this larger house and higher-status household, to store supplies atop the roof, if it possessed a single story.

3.4 Discussion.

The detailed description of the Western Town House above allows the following four research questions to be addressed.

1. Does its ground plan reveal it to be a house?
2. Does its ground plan show us how its space was used and organized? Was form related to function?

3. Does its ground plan reveal change over time?

4. What was its relationship to the immediate surroundings and to the broader context of Heit el-Ghurab? Does its ground plan indicate the socioeconomic status of its inhabitants and thereby add to our understanding of the overall workings of the Heit el-Ghurab site?

1. Does its ground plan reveal it to be a house? It appears from analysis of the ground plan of the “Western Town House” that we are justified in defining the structure as a house. Like the Eastern Town House, it is a discrete structure enclosed by four walls. Within the walls are spaces that conform to the tripartite plan interpreted by Ricke (1932: 35-42) and described extensively above. The dwelling is entered by a vestibule, space P, that links it with the external community. Spaces I, K/M, and Q can be identified as private living quarters, confirmed in this particular house by a sleeping platform. It appears that daily-life activities took place in the spaces composing the entire western side of the house—where hearths, ash, ceramics, and a silo pedestal provide evidence of food preparation (we assume that at least some of these spaces were unroofed)—and in space O, which may represent the workplace of a professional stone-mason. Central courtyard H, with its aesthetic placement of a tree, must have provided a recreational venue as well.

2. Does its ground plan show us how its space was used and organized? Was form related to function?

In contrast to the ground plan of the Eastern Town House, that of WTH initially appeared to lack identifiable zones, presenting a collection of spaces of varied shapes and sizes grouped without a clear pattern around a central courtyard. Closer analysis, however, with the additional visual support of flow diagrams, brought into clear focus that the space within the house was organized at its earliest phase of occupation into three functionally and physically distinct zones

dedicated to food preparation (spaces A, B/C, D, E, F, G, J, L, and S), to the occupant's public and professional life (niched vestibule P with adjacent workspace O), and to private domesticity (spaces I, K/M, and Q), each having its own access off central courtyard H. This arrangement was only slightly shifted in the final occupation phase when the occupant(s) separated off an apparent work-space (O) (see **fig. 3.20**).

3. Does its ground plan reveal change over time?

The ground plans of the Western Town House indicate that the dwelling may have had a fairly short term of occupation, represented in only two phases, 3 and 4. The changes made to the structure during its occupation can be generally characterized as upgrades, consisting of a comprehensive re-flooring, the installation of a probable sleeping platform, and the apparent dedication of a particular area (space O) to the pursuit of stone-work-related activity, which may hint at the profession of the occupant(s).

4. What was its relationship to the immediate surroundings and to the broader context of Heit el-Ghurab? Does its ground plan indicate the socioeconomic status of its inhabitants and thereby add to our understanding of the overall workings of the Heit el-Ghurab site?

The site plan of Western Town shows that the immediate context of WTH is a built environment exhibiting walls comparatively thicker, and a layout somewhat more regular, than those of Eastern Town. The house may be bordered on the east by a paved street, as noted above. Importantly, WTH opens onto the east, facing—beyond the probable street—what may have been the extension of an area of large, “official” storage enclosures (magazines) bordering the Royal Administration Building (RAB) (see **fig. 3.13**). The intervening modern soccer field unfortunately interrupts our line of sight in this direction.

To the west we have spotted, to date, evidence of at least two (probably three) other houses. These have substantial enclosure walls comparable to those of WTH (which measured, as noted above, from 0.6 meters to an extreme 1.1 meters in thickness). Among the larger dwellings there are indications of thinner walls that may represent smaller houses. Future excavation may reveal an extensive Western Town neighborhood.

WTH measured roughly 200 m² and comprised 15 spaces at its final occupation. Only further excavation will enlarge our base of comparison, but for the present we know the house was nearly twice the size of ETH (which measured just over 100 m² and had nine spaces) and only half the size of “House Unit 1” (still under excavation), 15 meters to the west. Piers Crocker’s premise that “size does matter” (Crocker 1985: 53) confirms indications provided by the house’s ground plan that the occupant of WTH was an individual of some status. The most obvious of these is of course the niched transitional space (vestibule P) at the house’s entrance. The pilastered niche formalized the vestibule by dividing it, essentially setting apart the master/occupant from a non-inhabitant (or what Hillier and Hanson call a visiting “petitioner” [1984: 194]). Moreover, the presence of multiple transitional spaces (spaces E and G, and later R) added to the complexity of the house’s layout, showing that the occupant possessed enough room, and the wherewithal, to construct those spaces, and enjoyed a high level of control over his living environment, including the luxury of an intentionally aesthetic space: a tree-shaded courtyard. The pilasters in space B/C may also be an indication of status, showing the extra protection the occupant was able to provide for his grain supply, although it must be repeated that our estimation of their function (as a raised base for silos) is not confirmed. If we assume for the sake of argument that two silos were stored upon the pilasters, we nevertheless lack the silos’ height measurements from which we could calculate, for comparative purposes, the volume of

grain they held. We similarly lack the height of the single ground-level silo in ETH, described above.

As we have seen above, material evidence—high-quality lithics, imported hard stone (granite), and a diet rich not only in red meat but in game hunted for sport, as well the capacity to store two household silos (indicated by the pedestals in space B/C)—also pointed to an occupant of means and status. Fragmentary sealings recovered from the collapse layer showed an administrative origin. While they must be considered tentatively (not having been found in situ), they would at least be indicative of the neighborhood in which WTH was situated.

We cannot say with certainty in what capacity the occupant of the Western Town House contributed to the Heit el-Ghurab environment—whether as a master stone-mason, for example, or an administrator. The house, presenting only two phases of occupation, may not have been occupied for an extended duration, perhaps indicating that the occupant of WTH had a professional, temporary “assignment” to fulfill. The house itself supports the characterization of Western Town as a neighborhood of administrators or professionals operating in an authoritative capacity (such as master craftsmen) involved in management aspects of the royal funerary constructions on the Plateau.

Chapter Four: Comparative Analysis and Conclusions

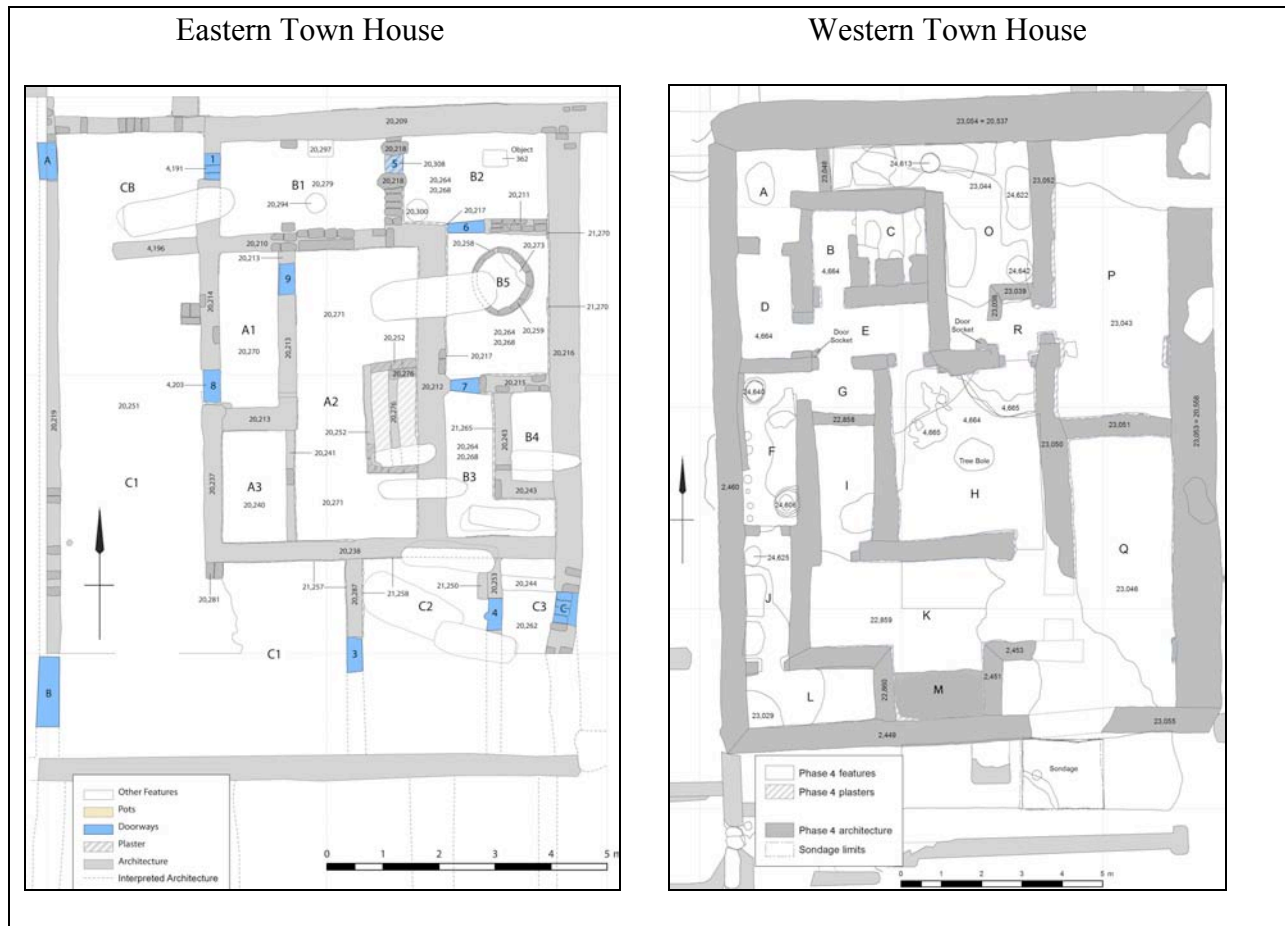


Figure 4.1. Latest-phase ground plans of the Eastern Town House and Western Town house.

The ground plans of the Eastern Town House and Western Town House have been examined closely and an overview of ground plans of attested houses from other Old Kingdom sites has been made. Their respective ground plans have, with all probability, identified ETH and WTH as domestic houses, each adhering to a tripartite plan proposed by Ricke (1932) for houses of the New Kingdom. Each house comprised zones with distinct functionality. While the stratigraphic profile revealed that both houses changed over time, their zoning remained

consistent. The houses reflect the socioeconomic inequalities of their occupants but do not confirm who the occupants were, or what role they played in the Heit el-Ghurab community. From information gathered in the preceding chapters, a comparative analysis of ETH and WTH can now be made, as formulated by questions four and five of the research plan:

5. How do the two houses, as revealed through their ground plans, compare to each other?
6. How do the ground plans of the two houses compare to those of other Old Kingdom houses outside of Heit el-Ghurab? Is there a house paradigm that can be identified for the Old Kingdom, or the 4th Dynasty specifically?

A comparison of macro-data initiates the analysis, followed by comparisons of specific house-features. The two research questions will be addressed together to avoid repetition of information. As a limited tool for comparison and, more importantly, as a foundation for the data that future excavation will hopefully provide, Table 1, below, tracks area measurements from ground plans of probable houses across what has been exposed to date of the Heit el-Ghurab site and of structures that have been identified as houses in the Old Kingdom settlements explored in this study. Measurements of Middle Kingdom houses at Lahun have been added at the bottom of the table as a general point of reference.

House size. Area measurements taken from ground plans are just that: ground measurements. Second stories that may once have existed are lost to us, rendering comparisons of area measurements hardly scientific. Provisos aside, on the basis of first-floor ground plans alone, the Eastern Town House and the Western Town House are both rectangular, but of unequal size. Measuring 198.40 m², WTH is virtually twice as large as ETH, which totals 101.92 m². In the context of Heit el-Ghurab as we know it thus far, ETH is the smallest house, while WTH measures at the mid-range, the largest known house on site being “House 1” of 400 m².

That house-size may reflect status was supported above by the recovered material culture and faunal and botanical evidence, which indicated that the household of WTH was on a higher socioeconomic scale than that of ETH.

The addition of chronology to the parameter of house size offers a more meaningful comparison. In Table 1, the smallest of the Old Kingdom houses listed is Elephantine's "House A" in its earliest phase, measuring 75 m². The largest Old Kingdom house listed is HeG's House Unit 1 (located in Western Town, roughly 15 meters west of WTH), which measures 400 m². The size ratio for this sampling of the Old Kingdom is thus about 1:5. The table also shows, in contrast, that the smallest houses at the late Middle Kingdom pyramid-town of Lahun measure 40 m², while the largest cover a vast area of 2,540.43 m², constituting a ratio of 1:62—a striking gradient compared to that of the Old Kingdom sampling. Within Heit el-Ghurab itself the gradient of house sizes is conspicuously gradual, the four houses listed in Table 1 showing a steady increase in size from roughly 100 to 200 to 300 to 400 square meters.

A broader base of comparison provided by future excavation may bear out this preliminary indication that the Old Kingdom featured a greater homogeneity of house size than that we see in later periods. Assuming size reflects status, these data might in turn lead one to infer a proportionately low gradient of social stratification in the Old Kingdom. The material culture recovered from Heit el-Ghurab, however, does not support such an inference. Sealings recovered from a refuse mound just west of the site in fact show emphatically elite titles, including "Scribe of the Royal Documents" and "Scribe of the King's Writing Case" (Nolan 2007). Lithic and faunal evidence recovered from ETH and WTH also reflect, as we have seen above, a disparity in living standards. It may be more accurate to infer that in the Old Kingdom

the expression of social status did not manifest itself in house size to the extent that it did in later periods of Egyptian history.

Area/House	Total m ²	Date of structure	Comments
HeG, Western Town: House 1	400 m ²	4 th Dynasty	
HeG, Western Town: House 2	299 m ²	4 th Dynasty	
HeG, Western Town: House (WTH)	198.40 m ²	4 th Dynasty	
HeG, Eastern Town: House (ETH)	101.92 m ²	4 th Dynasty	
Khentkawes Town: House E	188.40 m ²	4 th Dynasty	
Elephantine (East Town): Structure A (phase 1)	88 m ²	First half 3 rd Dynasty	
Structure A (phase 2)	88 m ²	Second half 3 rd Dynasty to early 4 th Dynasty	
Elephantine (North of Satet Niche): House A (phase 1)	75 m ²	Second half 2 nd Dynasty	
House A (phase 2)	152 m ² (132 m ²)	First half 3 rd Dynasty	(with second story) (first floor only)
Abydos (North): Largest (average) Next largest (average) Smallest	190 m ² 160 m ² 89 m ²	Old Kingdom/FIP	
Lahun:			
Mansions	2540.43 m ²		Quirke (2004: 56)*
Mid-size (Western Sector)	168.00 m ²	Middle Kingdom	Quirke (2004: 75)
Mid-size (Main Town)	135.00 m ²		Quirke (2004: 76)
Small (Main Town)	50.00 m ²		Quirke (2004: 85)
Smallest (Main Town)	40.00 m ²		Quirke (2004: 86)

* Square meters converted from feet.

Zoning. As we have seen above, both ETH and WTH exhibited zones of distinct functionality. In ETH, zone A comprised a domestic core with private living quarters (including

a sleeping platform) and peripheral zones B and C apparently served as areas of food preparation and industry/crafts-work. Similarly, WTH exhibited in its southern spaces a zone of private living quarters (including a sleeping platform), while its western spaces were dedicated to food preparation, and its northeastern spaces, to work-related activity.

An important difference between the two houses, however, is the situation of an open courtyard in the direct center of the Western Town House, from which its three zones were individually accessed. The central courtyard—with tree, no less—is suggestive of the courtyard houses of the Middle Kingdom (Petrie 1891: pl. 14; Badawy 1966: 24; Arnold 1989: 77) and indeed may be a forerunner of this house type. The significance of the inward-orientation that the central courtyard imposes³⁵ is enigmatic. We have seen above that the industrious household in ETH ensured their efficient access to, and communication with, areas of apparent industry to the west. In contrast, for the higher-status household of WTH, such a degree of external orientation was unnecessary, a formal reception niche sufficing for this purpose. It can be inferred that the central courtyard was an indicator of status.

Layout. Analysis of their ground plans has shown that both ETH and WTH, though presenting contrasting layouts (see **fig. 4.1**), conform to the tripartite arrangement proposed by Ricke (1932) for houses of the New Kingdom. The tripartite plan was also expressed in the layout of Elephantine's House A (in both its earlier and later phases) and Structure A (in its later phase). The ground plan of House E in Khentkawes Town complicated an application of the tripartite scheme due to aberrations in its layout, while clearer ground plans would be needed from Abydos before its application could be attempted. Lacking a wider base of comparison (we do not yet have the luxury of comparing significant numbers of Old Kingdom houses, let alone

³⁵ The central courtyard design was a signature characteristic of houses in old Cairo (see, e.g., Lane 1895: 20-21), duplicated in the design of the University of Chicago's famous scholastic headquarters, Chicago House, in Luxor.

whole “groups” of houses, as Shaw [1992] had at Tell el-Amarna), it can tentatively be assessed that the tripartite plan applies retroactively to houses of the Old Kingdom, as Badawy thought (1966: 24).

The layouts of the houses from Elephantine, Abydos, and Khentkawes presented in Chapter Two are also varied, differing among themselves and from ETH and WTH. To date there appears to be no more a paradigmatic layout for Old Kingdom houses than there is for houses we live in today. It may be that the pursuit of a “typical” Old-Kingdom house may be seeking the answer to a wrong question. As analysis of the ground plans presented in this study shows, it is first necessary to distinguish an Old Kingdom “domestic” house from a unit of “housing” (exemplified by House E, a component of the string of units in the Khentkawes settlement, or by the individual galleries composing the gallery system at Heit el-Ghurab). Establishing that, a more valid question would be: *Are there discernable patterns in the way space is used in domestic houses of the Old Kingdom?*

To paraphrase Ross Samson (1990: 14), structures are both the medium and the product of human action. In the small sampling of houses investigated above we see this reflexive relationship expressed in the following space-use pattern: a tendency toward increased control over space with a concomitant decrease in space multi-functionality (that is, a tendency toward increased dedication of space to specific functions), coinciding with high, or at least upgraded, socioeconomic status. In the Western Town House, for example, a transitional space (“R”) was added to segregate the newly dedicated workplace “O.” The occupants of the Eastern Town House added, along with upgrades in the form of a sleeping platform and *mastaba*, features that enhanced the security and privacy of the household (a partition wall creating space CB at the entrance; an enclosure wall around the household silo). In Elephantine’s House A, the number of

external accesses was reduced when the occupants expanded the dwelling and added a second story, while through the major transformation of Structure A, in *Oststadt*, the security provided by the exaggerated vestibule was maintained.

A remark on the Old-Kingdom special-purpose community. The Eastern Town House and the Western Town House are both part of a special-purpose community (that of Heit el-Ghurab), but are located in neighborhoods that do not overtly exhibit state planning. The sampling of late Old Kingdom/First Intermediate Period houses excavated in the probable cult-settlement of Abydos also do not readily appear to be state-planned. Elephantine, a fortified settlement and nome capital, similarly presents houses that do not reflect obvious evidence of state imposition. In contrast, the mortuary-cult settlement of Khentkawes consists of planned housing units that may not qualify as “domestic.” (AERA is currently excavating east of the planned settlement, however, and may yet reveal urban architecture of organic character.) It can be concluded that special-purpose settlements of the Old Kingdom allowed for, included, and indeed relied upon, organic neighborhoods where people had enough freedom to, for example, increase their livelihood, raise a family, and add a second story to their house.

Sleeping platforms. Both ETH and WTH had sleeping platforms enclosed in recessed spaces (the platform in ETH was in space A3; the example in WTH was in space M; see **fig. 4.1**). They were of comparable lengths and widths, falling well within the size range for sleeping platforms known to date from the Old Kingdom. Table 2, below, lists these platforms, all of which were found at Giza (one platform was found at the settlement southwest of Menkawre’s pyramid and 16 examples have been found at Heit el-Ghurab). Koltsida (2007: 99) reminds us that bed niches—specifically, bed-daises enclosed within niches—were present at Tell el-Amarna (and see Badawy’s restored perspective of a Middle Kingdom bedroom at Lahun [1966:

24, fig. 6b]). ETH's space A3 and WTH's space M offer much earlier examples. Perhaps significantly, these enclosed platforms are flat, while the non-enclosed platforms slope from head to foot. It may be that enclosed sleeping platforms were intended to support bed furniture, while the non-enclosed platforms, topped with matting, were constructed with the slope "built in."³⁶

Location	Length	Width	Height	Number of Platforms
HeG: Gallery 3.III:				
Guard's Room	2.40 m	1.40 m	0.10-0.15 m	1
Colonnade	1.80 m	0.85-0.95 m		2
Back Room	1.61 m 2.06 m	1.10-1.20 m 0.90 m		1 1
HeG: Gallery 3.IV:				
Guard's Room	2.15 m	1.00 m	0.08-0.14 m	1
Colonnade	1.80–1.86 m	0.80-1.14 m	0.10-0.16 m	4
Back Room	1.86–1.95 m	1.30 m	0.11-0.34 m	1
HeG: ETH	2.00 m	1.16 m	0.16 m	1
HeG: Royal Administrative Building (RAB)	1.80 m	0.80 m	0.12 m	2 (same size)
HeG: WTH	2.12 m	1.20 m	0.12 m	1
HeG: Western Town House 1	1.96 m	1.32 m	0.12-0.20 m	1
Settlement SW of Menkawre	1.70-1.85 m	0.90-1.05 m	0.05-0.20 m	1

³⁶ The famous 4th-dynasty bed of Hetep-heres, found by Reisner (1955: 32), measures 177.8 cm long and 97 cm wide. It slopes from head to toe. Also see **fig. 4.2** below.

Niches. In the Old Kingdom houses presented above, a pilastered niche was present in vestibule P of the Western Town House at Heit el-Ghurab; in Selim Hassan's "living rooms" in the Khentkawes Town units (represented above by House E); in Elephantine's Structure A, where it was featured in a twice-repeated sequence following the entrance vestibule; and probably in the *Hauptraum* of Elephantine's House A in its earlier phase. In all but the last example the niche qualifies, based on its location in a non-private area, as a reception space. Its position at the farthest reach of access in House A, however, would tentatively qualify it as a sleeping space. Table 3, below, lists the location and measurements of the niches featured in this study and shows that two additional examples have been found in structures currently under excavation at Heit el-Ghurab (Lehner 2015 a and b). In one of these structures, a probable house associated with the "Corral" area, two niches have been found. One of these occupies a space off the entrance vestibule, qualifying it as a reception niche. The other is tucked into an off-axis location and presented three limestone bed-leg supports of the familiar type shown in tomb scenes of the Old Kingdom (see **fig 4.2**, from the 6th-dynasty tomb of Mereruka at Saqqara), thus supporting its identification as a sleeping niche. It is hoped that these data will initiate future consideration of whether a distinction can be made between niches defining a "reception" space and niches defining a sleeping area. Scrutiny of the preliminary data in Table 3 does not permit the assignment of a standard measurement that distinguishes reception niches from sleeping niches.

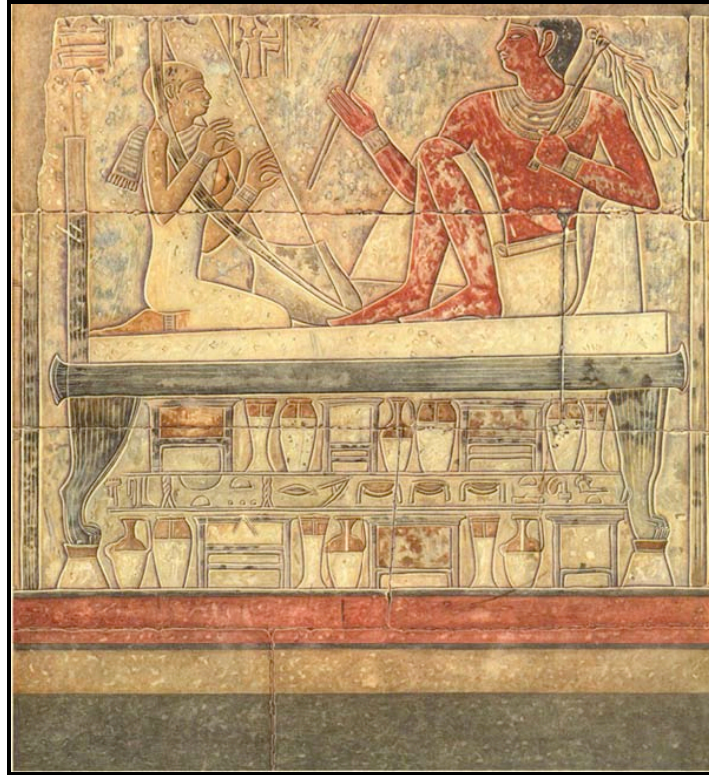


Figure 4.2. Sloping bed with leg supports represented in the 6th-dynasty tomb of Mereruka at Sakkarah (The Tomb of Mereruka, *Oriental Institute Publications 31*, pl. 95).

Area	Building	Room name	Room		Niche	
			Length	Width	Width	Depth
HeG Western Town	WTH	P	7.00 x 2.50-2.70 m		2.65 x 1.20 m	
		Q	7.10 x 2.60 m		2.60 x 1.10 m	
HeG Western Town	House 1	10780	8.46 x 3.09 m		3.09 x 1.34 m	
HeG SWI (Corral)	ES2	10805	7.30 x 2.61 m		2.61 x 1.06 m (eastern niche) 2.61 x 1.20 m (western niche)	
Khentkawes Town	E	71/11582	6.25 x 2.10 m		2.10 x 0.70-0.80 m	
Khentkawes Town	H	105	6.40 x 2.00 m		2.00 x 0.90 m	
Khentkawes Town	J	118	7.10 x 2.10 m		2.10 x 0.90 m	
Khentkawes Town	K	129/11369	6.10 x 2.70 m		2.70 x 1.00 m	
Khentkawes Town	M	151	6.30 x 2.50 m		2.50 x 0.75 m	
		159	8.30 x 3.10 m		2.80 x 1.50 m	
Khentkawes Town	Silo building complex	G/11241	7.25 x 2.42 m		2.42 x 1.05 m	
Elephantine (East Town)	Structure A (phase 1)	Eastern	7.20 x 2.30-2.50 m		2.30 x 0.85 m	
		Middle	5.00 x 2.20 m		2.20 x 1.00 m	
		Western	5.00 x 2.20 m		2.20 x 1.60 m	
	Structure A (phase 2)	Western	5.00 x 2.20 m		2.20 x 1.60 m	
Elephantine (north of Satet)	House A (phase 1)	<i>Hauptraum</i>	6.40 x 2.40 m		2.40 x 0.70 m	

Looking forward. Just west of Heit el-Ghurab sits the Old-Kingdom “Workers’ Cemetery,” as noted above. At present the contemporaneity of the cemetery with our site is suspected but unconfirmed. We may do well to apply Cagle’s synthetic approach (2003: 19) by working to establish a dialogue, and ultimately a synthesis, between these two sites that may prove to be counterparts of one entity. Zahi Hawass asserts the existence of links between them

(1996), emphasizing that Heit el-Ghurab may have housed the builders, not only of the funerary monuments on the Giza Plateau, but of the humbler rock and mudbrick tombs in the cemetery. Some of the tombs excavated in the cemetery have proven to contain epigraphic evidence (sealings, reliefs, tomb inscriptions) and material culture (statuary) (ibid). Indeed the titles *shd jrjs* (Inspector of Tomb-building), *hrp jrjs* (Director of Tomb-building), and *jmj-r^c gs mr* (Overseer of the Side of the Pyramid) appear in this necropolis (ibid.: 62, 66), which comprises an ongoing archaeological concession of the Ministry of Antiquities.

This study would be remiss in omitting a plea for context excavation in order to characterize relationships. We don't yet know how the Eastern Town House and the Western Town House fit into the overall workings of Heit el-Ghurab. Lacking their excavated surroundings, our perspective is myopic and our understanding, frustrated.

The settlement archaeologist who would attempt to excavate Egypt's Old-Kingdom domestic architecture cannot realistically expect to unearth houses still standing. What we can hope for, however, if we do our jobs correctly, is to be rewarded with the production of clear ground plans from which Old Kingdom houses will ultimately define themselves.

Appendix³⁷:

A Brief Ethnoarchaeological Study of Traditional Egyptian Houses

From December 2003 through March of 2004, I undertook a course of ethnoarchaeological fieldwork, with the support of the American Research Center in Egypt, to collect data from traditional Egyptian houses for the purposes of comparison with the remains of ancient Egyptian domestic structures and of basic documentation available to scholars for future study. Data was collected from a limited sampling of houses, within a targeted chronological range, in Upper and Lower Egypt. The owners of the dwellings, whom I interviewed and who requested their names not be given, showed me through their homes and provided information on them. I have recently been informed that “House One,” included in this brief study, was demolished in 2013 to make way for a new construction, underscoring the need for documentation of Egypt’s traditional houses while they are still standing and of traditional ways of life that are fast disappearing.

Contextual Background

My approach to the study of traditional Egyptian houses is holistic, the houses I visited appearing to reflect a response to a combination of geographical/environmental, cultural/social, political and economic factors—not excluding the variation resulting from personal ingenuity and individual choice—that inform (or should inform) our interpretations. The *fallaḥiin* (farmers) who largely occupy Egypt’s traditional houses have long been documented. Some of the fine older works, written before the cessation of the Nile flood by the High Aswan Dam, and which

³⁷ The figures for this ethnoarchaeological investigation are grouped together at the end of the Appendix.

tend to either rhapsodize about, or lament, the “changelessness” of the *fallaah*—e.g., Edward Lane’s 1836 publication, *Manners and Customs of the Modern Egyptians*, written during the rule of Muhammad Aly; Winifred Blackman’s *The Fellāhīn of Upper Egypt*, first published in 1927; Jean Lozach’s and Georges Hug’s two-part survey of 1930, *L’habitat rural en Égypte*; Taha Hussein’s 1932 memoir, *An Egyptian Childhood*; and Father Henry Habib Ayrout’s *The Egyptian Peasant*, originally published in French in 1938—have virtually become classics in their own right, while the post-High Dam “*fallaḥiīn* in transition” have been emphasized in later studies: (e.g., Fakhouri 1972, updated in 1987; Castel 1984; Henein 1988). In this respect, I adhere to Naguib’s preference for the term “living traditions” over “static traditions” (Naguib 2002: 182) since, as we will be reminded by the documentation that follows, the *fallaḥiīn* have remained anything but static, their houses no less so. As a field archaeologist, I submit here a brief beginner’s essay, condensed and limited in scope, into a compelling field of research.

Prior to the nineteenth century, traditional houses in rural Egypt were made of mudbrick (Arabic *tuub akhdar*, of Pharaonic origin: sun-baked brick of silty Nile clay tempered with straw) and situated in dense clusters on relatively high ground for protection from the annual Nile flood (Blackman 1927: 26; Lozach 1930: 7; Mahgoub 2000: 3). In his study of Kafr el-Elow, located eighteen miles south of Cairo, Hani Fakhoury (1987: 11) explains that the village’s name, translated “high village,” reflects the eighteenth-century origins of the community which, according to the village elders, resettled on higher ground after its original location a mile south had been flooded. Rural houses were constructed in dense groupings for security and because of the limited space available at raised elevations (Mahgoub 2000: 3), a distribution pattern reinforced by the fact that the construction of isolated houses was prohibited by the authorities, as tax collection was facilitated by the presence of concentrated settlements (Lozach 1930: 8).

The commercialization of Egypt's agriculture in the nineteenth century would profoundly influence the lives of the *fallaḥiīn* and directly impact the location, spatial distribution, and constituent materials of their houses.

A nascent trend toward commercialization had already begun in Egypt as early as the sixteenth century in response to European expansion and technological advances. A series of “Capitulations” (contracts of protection and tax-exemption), made first with the French in the early 1500s, and later with the English (1580) and the Dutch (1612), secured inroads for European trade with Ottoman Egypt (Lewis 1966: 165-166; the Capitulations technically remained in effect until 1948: Al-Sayyid Marsot 1985: 97). It was of course Muhammad Aly (1805 – 1848), having emerged in the wake of the French occupation, who accelerated the trend through his emphasis on agricultural exports (that is, cash crops) to supply the demands of European industrialization (Al-Sayyid Marsot 1985: 54-65). Egypt's new cash-crop agriculture was achieved by hyper-cultivation—that is, by the replacement of traditional seasonal basin-irrigation with perennial irrigation, permitting crops to be cultivated year-round. The biannually rotated crops of cereals/flax with beans that had formerly constituted Egypt's subsistence economy—a rotation that conserves nitrogen (Ibrahim and Ibrahim 2003: 124)—was consequently replaced by the nutrient-depleting cultivation of two or three crops, primarily labor-intensive cotton and sugar cane, per year (Al-Sayyid Marsot 1985: 57; Lewis 1966: 167).

Muhammad Aly's plans to expand and improve irrigation for the purpose of amplifying cotton cultivation included the building of a barrage at the apex of the Delta, north of Cairo. “Al-Qanatir Al-Khayriya” was completed under his son Said in 1861 (Ibrahim and Ibrahim 2003: 74). Not a dam *per se* (i.e., not a storage reservoir), the barrage helped raise the level of the Nile, facilitating the diversion of water into irrigation canals. Muhammad Aly's grandson Ismail (1863

– 1879) further expanded the perennial irrigation system, taking advantage of the cotton market while American cotton production was disrupted by the Civil War (Ibrahim and Ibrahim 2003: 74; Al-Sayyid Marsot 1985: 67).

A consequence of perennial irrigation and year-round cultivation was that in the nineteenth century it became necessary for the *fallaḥiin* to live in the floodplain, near the crops and near the canals and dykes they were required to maintain (Al-Sayyid Marsot 1985: 58), a transformation, as Mahgoub puts it, from “living on the hills to the spread of houses on the flat agricultural land” (Mahgoub 2000: 6). On the banks of irrigation canals emerged a new type of settlement, the *ʿizbah* (plural *ʿizab*), each inhabited by a landowner’s foreman and some 20 to 30 families of *fallaḥiin* who worked the land under his supervision. The translation of the Arabic verb *ʿazaba*, from which the noun *ʿizbah* derives, is “to be distant from,” very possibly connoting the removal of the *fallaḥiin* from hilltop villages to what were essentially special-purpose communities on sub-flood-level agricultural land. In contrast to the former compact village clusters, the *ʿizab* were manifested in a linear distribution aligning the canals. Some of these hamlets developed into communities that remain today (though no longer functioning as *ʿizab* as a result of agrarian reforms), retaining the term *ʿizbah* in their nomenclature.

By the turn of the century, cotton had become a veritable monoculture in British-occupied Egypt, whence it was exported to supply the mills of England. The importance of cotton cultivation in the Cromer (Evelyn Baring) period had in fact provided the impetus for the construction in 1902 of the Low Aswan Dam, a true storage reservoir, as well as barrages at Asyut and Zifta in the same year (Al-Sayyid Marsot 1985: 78). Additional barrages were built at Esna in 1909 and at Nag’ Hammadi in 1930, so that most of the Nile Valley was artificially irrigated by the first half of the twentieth century (Ibrahim and Ibrahim 2003: 125).

Egypt achieved independence in 1922 and subsequently elected a prime minister (Saad Zaghlul) of *fallaah* stock, yet the country had become so economically dependent on Britain, the main buyer of cotton, that it nevertheless remained entrenched as a cotton monoculture (Al-Sayyid Marsot 1985: 86-87): by 1938 cotton would constitute 91 percent of Egypt's exports (Ibrahim and Ibrahim 2003: 125).

It is significant that the water-control mechanisms mentioned above, including the dam at Aswan, continued to allow the passage of flood water and the sediment it carried; what they did not allow was the former receding and drainage of the water, setting in motion the chain of dilemmas resulting from accumulating subsoil water and consequent soil salinization that Egypt still faces today (Ibrahim and Ibrahim 2003: 74). As humanitarian-architect Hassan Fathy stated, "The greatest enemy of mud brick is damp" (Fathy 1976)³⁸. Thus the deleterious effects of water-logging on indigenous mudbrick houses were apparent by the early part of the twentieth century. Houses in Lower Egypt, especially, suffered deterioration and collapse given the already-moist climate of the Delta: not only did mudbrick structures receive rainfall from above but unnatural subsoil water (including the salts it contained) from below, in a region saturated by artificial irrigation (Richmond 1911; Ayrout 1963: 114-116).

Fired (i.e., red) brick, in contrast, is more durable than mudbrick. It is likely for this reason that an early twentieth-century transition to the use of red brick (*tuub ahmar*) was effected—in house foundations if not walls—by Lower Egyptian *fallaḥiin* who could afford to purchase it (Ayrout 1963: 114; Lozach 1930). Being a costlier and more durable material, and also through the *fallaḥiin*'s increased exposure to urban (and western) architecture in the course of the two World Wars (Abdel-Fadil 1975: 109), red brick became a symbol of status (Mahgoub

³⁸ The pages of Fathy's work, rich in intelligence, humor, and compassion, are unnumbered. This statement is from Part Two ("Chorale"), in his chapter entitled "The Bedroom."

2000: 9; Fakhoury 1987: 19). However, as the documentation below exhibits, although red brick withstands moisture longer than mudbrick, it ultimately disintegrates, bringing forth excrescences of salt in environments where soil salinity is high.

The water-based dilemmas of the first half of the twentieth century were a prelude to those caused by the High Aswan Dam, constructed under Nasser and inaugurated in 1971 under Sadat (Naguib 2002: 184-185). Unlike its predecessor, the High Dam (its capacity to generate electricity and to safeguard Egypt during times of drought notwithstanding) not only stores water but blocks the inundation, releasing water in a steady stream. The Nile's nutrient-rich silt is no longer carried down-river to replenish Egypt (rather, it backs up in Lake Nasser, behind the dam). Moreover, because the natural "washing" mechanism of the flood has ceased—further disrupting the pattern of drainage and further elevating the groundwater table—the problems of unnatural soil-saturation and salinization rooted essentially in the previous century are magnified, resulting in the need for prohibitively expensive, and sometimes even harmful, chemical fertilizers (Ibrahim and Ibrahim 2003: 61-65, 78, 82). In short, since the construction of the High Aswan Dam agriculture has become increasingly challenging while its output has declined in quality and quantity (Al-Sayyid Marsot 1985: 141). It is understandable that Sadat's open-door policy of the 1970s effected a new trend: the rural out-migration of *fallahin* to jobs in oil-producing countries, and their later return with savings and aspirations of building modernized "citified" homes of red brick (Ibrahim and Ibrahim 2003: 246).

Both mudbrick and red brick require the use of Nile mud, or more specifically, silty topsoil. Upon the damming of the Nile, the sedimentation of Egypt's waterways ceased (Ibrahim and Ibrahim 2003: 78). Continued stripping of topsoil for brick-making and also as a soil amendment for agriculture consequently resulted in the scarcity of this nutrient-rich earth. In

1985 Hosni Mubarak shut down Egypt's mud-using brick industry in order to encourage the use of shale and cement, theoretically bringing mudbrick architecture—including its maintenance and repair—to an end. Shale bricks, though they look the same as red brick, do not have the same climate-modification³⁹ properties as mud-based brick (fired or not) and they crack more easily. Therefore topsoil continues to be mined (or sold) illicitly (MacKenzie 1985; Ibrahim and Ibrahim 2003: 246).

Mudbrick domestic architecture in Egypt, while legally crippled, in fact endures in a limited way (Ibrahim and Ibrahim 2003: 246). Since land is at a premium, buildings tend to be constructed upward rather than outward. In order to accommodate multiple stories, mudbrick walls must be significantly thicker than shale or cement counterparts, resulting in economic, logistical, and legal hindrances that generally sway the balance in favor of the latter.

A Walkthrough of House One: Upper Egypt

House One is located in the governorate of Qena, in the west-bank village of Al-Biirat, in the former floodplain roughly three kilometers west of the Nile. The house, bordered by agriculture on the north, is estimated to have been built in the 1880s by a *fallaah* (farmer) who was the grandfather of the house's current owner, whom I will call "Ibrahim." The house was inherited first by Ibrahim's father, Ahmad, who was born there in 1911 but who went on to build his own home as an adult. It was then passed on to Ibrahim upon Ahmad's death, although Ibrahim does not live in the house himself, having a home nearby (thus he owns a total of three houses). It is significant that this house, though it was passed down through two generations, was

³⁹ Mudbrick is traditionally thought to keep internal environments warm in winter and cool in summer (Emory 2011: 2; Endruweit 1994). Kemp (2000: 88) asserts, however, that just as mudbrick retains heat in winter, it can also retain heat to an uncomfortable degree in the warmer seasons, depending on the composition of the mudbrick, the number of stories in the building, and the surrounding environment.

lived in only by the first owner, with his wife and two sons, and has therefore remained little occupied and, though run-down, virtually unchanged in over a hundred years.

House One is constructed of mudbrick. It features only one enclosed room, of one story with a flat roof, situated within a large walled courtyard extending to both the north and south. Earthen floors are present throughout and the walls are mud-plastered internally and externally. The courtyard forms an inverted-L, measuring 14.25 m north-south, by 7.25 m east-west, by 3.5 m east-west in the leg of the “L” (**fig. 1**)⁴⁰, covering a total of approximately 70 m².

There is one entrance, located in the southwest corner of the enclosure wall. One entrance, as will be seen below, was typical of the traditional houses that I visited, regardless of geographical location (the typicality of single entrances was also noted by Fakhoury [1987: 17] near the Delta; and by Henein in Upper Egypt [1988: 44]). It is notable that, technically speaking, there is a direct line of sight from the entrance all the way through to the rear (north) enclosure wall of the house. Within that line of sight, however, there is basically nothing to be visually accessed, the only habitation areas existing just to the east, creating a measure of privacy; this will be clarified below. The entrance door, which measures 2.5 m x 1.2 m, is sturdily made of panels of acacia wood framed by slimmer lengths of the same wood, buttressed horizontally by an additional slim plank. The doorjamb pivots in a socket in the wooden lintel overhead, in virtually the same mechanism we have seen in ancient Egyptian houses of the Old Kingdom, presented in the discussions above (e.g., at the 4th-dynasty site of Heit el-Ghurab). The door still retains its original wooden lock and key mechanism (**fig. 2**), the key being composed of the traditional rectangular piece of wood with small cylindrical pieces of wood (pins) mounted upon it in a set pattern. (Henein’s description of these locks in Upper Egypt features iron pins [1988: 44-45], as does Lane’s, in houses of early nineteenth-century Cairo [1895: 29]). Ibrahim

⁴⁰ At end of Appendix.

honors the cultural heritage represented by the archaic lock and key and proudly keeps them in working order.

The entrance to House One opens into a southern court measuring 4.2 m north-south by 2.7 m east-west. The height of the walls here is 2.9 m. Only the eastern half of the court is roofed, the roofing material comprising split (quartered) palm trunks woven with palm ribs and the reeds that are so prevalent throughout Egypt along the canals and on the banks of the Nile (photographed in Henein 1988: 9). No mud covering had been applied to this “shade-screen” roofing. Two aging date palms grow in the court’s southeast corner (**fig. 3**). Three others grow in the northern court area, described below. It is interesting to contemplate whether the trees were planted by Ibrahim’s grandfather to embellish the courtyards and provide shade and dates, or possibly to provide spatial/visual barriers on the property (a possibility explored below), or whether they grew there incidentally after the house was built, or whether the house was intentionally built around them. The southern court was used by Ibrahim’s grandfather, the master of the house, to receive guests without exposing the rest of the household to strangers, the lightly roofed eastern portion providing shade during the warmest months (Lozach described such light roofing in the early twentieth century, albeit in the Delta, as a consequence of poverty rather than pragmatism [1930: 28].) Both the southern and northern courtyards were slept in during the summer.

Leaving the court through a doorless access in the northwest, one proceeds north into a short (3.25 m) stretch of corridor, off of which is a small room on the east. This is the bedroom, the only completely roofed and enclosed room in the house. It measures 2.5 m north-south, 2.35 m east-west, and 2.9 m in height. The bedroom features a low wooden door, 1.49 m high and 0.70 m wide, situated in the room’s southwest corner. This door is made of plain panels of acacia

wood; in contrast to the main entrance door, it is not framed or buttressed. According to Ibrahim, the door was built low in order to keep the heat (which rises) in during cool weather. (In desert climates, the evenings, especially in winter, can be bitterly cold. Low doors, it will be seen, were a common feature of other traditional houses I researched.) Perhaps because the bedroom is situated within open space, flanked by a courtyard on the north and the south, it, like the main entrance door, is secured with a lock (**fig. 4**).

The roof of the bedroom, in contrast to the shade-screening of the southern court, is a sturdier construction of wattle and daub—that is, split palm trunks, palm ribs, and reeds, covered over with mud (**fig. 5**; described by Mahgoub [2000: 7]). A low mudbrick parapet, 0.50 m high and 0.3 m wide, reinforced with a line of used (mostly intact) ceramic jars, borders the roof's perimeter. The parapet was constructed in order to retain and protect materials stored on the roof, thus confirming that the roof had been used, to some extent, for storage. One accesses the roof from the northeast corner of the (southern) courtyard via a ladder made from a whole palm trunk into which foot grooves have been carved. According to other examples I have seen, floating stairs made from palm trunks more commonly feature steps built up from a mud coating applied to the trunk, which has been halved or quartered (Henein documents such stairs at Mārī Girgis [1988: 46 and plate 8]). In one particular example from Al-Biirat, I noted that a single rail from a train track had been inventively employed as a counterpart to a halved palm trunk, supporting plastered brick steps (**fig. 6**).

The width of the bedroom walls is 0.40 m. In the south wall, approximately one meter below the roof and 0.4 m from the doorway, there is a small, round opening, 30 cm in diameter (see **fig. 4**). Across from that opening, in the northern wall of the bedroom, is a parallel but slightly smaller opening measuring about 25 cm in diameter. Both openings, northern and

southern, were made, according to Ibrahim, to create air circulation in a virtually windowless room, while keeping the heat in during cool weather (such ventilation was documented in “poor” houses of Upper Egypt by Hug [1930: 94]).

Also in the northern wall of the bedroom, down at floor level and about 0.5 m from the room’s northwest corner, is a small crude opening (virtually a hole), with a diameter of 18 cm. Ibrahim’s grandfather made this hole—a practical way for him to keep watch during winter nights (during which he slept on mats on the floor of the room) over the pigeons he kept in the adjacent northern courtyard.

In the northwest corner of the bedroom, where the western and northern walls meet, a small semi-circular mud shelf is built into the wall about one meter above floor level. The shelf supported a kerosene lamp, still in situ at the time of my visit (**fig. 7**). The radius of the little shelf is 12 cm and it measures 5 cm in thickness. There are black smudges of soot on the walls above the shelf—an indication of the lamp’s long-time use.

I noticed on the bedroom walls a few peculiar “lumps” that had clearly been plastered over. Ibrahim did not know what they were but explained that he had always been curious about them and so decided on the spot to open them. Using a stick of wood, he gently tapped around the edges of the raised areas, cracking the plaster and exposing an array of small notebooks, tiny dolls, and folded papers which, when unfolded, revealed verses of the Qur’an and magic spells for protection, all written in Arabic, some of it inscrutable (see **fig. 4**). It may be significant that these items were secreted in the bedroom, perhaps as apotropaic devices to protect those sleeping, and therefore vulnerable, within (Blackman was especially attentive to details of magic and superstition among the *fallahiin* [1927: e.g., 40 and passim]). I acknowledged my gratitude to Ibrahim for his willingness to unveil to me some of the house’s secrets.

Leaving the bedroom, one proceeds north through the corridor into a large, unroofed inverted “L”-shaped space, essentially a northern courtyard. It measures 7.5 m north-south, by 6.7 m east-west in the foot of the “L,” by 4.0 m east-west. Three palm trees grow within this court: a single palm stands in the far northeast corner and two originally stood in approximately the southwest corner, although one of these has now toppled over. The southernmost palms, together with a grouping of installations (described below) are aligned such that they form a virtual extension of the corridor and thus a visual barrier in the line of sight from the house’s entrance in the south. Although we can’t know whether Ibrahim’s grandfather intentionally planted the trees in this arrangement, it would indeed seem that they were used to advantage to create a measure of privacy for those going about their household tasks in this apparently work-related area of the house.

The assemblage of installations here includes three tall, now-dilapidated, dovecotes made of mud embedded with vertical rows of pottery vessels (**fig. 8**). Placed with their rims facing outward, the vessels function as enclosures (cubby-holes) for the pigeons. Traditional dovecotes in rural Egypt are well documented (see, for example, the *pigeonniers* described and illustrated by Henein [1988: 17 and pl. 5]). **Figure 9** presents an almost monumental example that was shown to me in a nearby neighborhood of Al-Biirat. This exceptional structure was part of a recently demolished late nineteenth-century house⁴¹.

⁴¹ Pigeon-keeping is practiced today throughout Egypt, mostly in rural environments, but it is not uncommon to see dovecotes even on the rooftops of city apartment houses. The construction materials and styles vary widely, as the examples in this brief study demonstrate (indeed I have seen makeshift examples made of plywood). Pigeons are kept as a source of food, and in the countryside their dung provides a source of fertilizer (Blackman 1927: 27). Historically the domestication (as opposed to the hunting/trapping) of pigeons is known in Egypt from at least the Middle Kingdom. A square-based pigeon tower, complete with pigeons, is featured in a Middle Kingdom wooden model, 81 cm high, now in the Egyptian Museum in Cairo (see “Model of a Farmyard”: www.eternalegypt.org). Interestingly, this ancient type is not dissimilar from pigeon towers in the Delta in the earliest years of the nineteenth century CE, illustrated by the Spanish explorer/spy, Ali Bey Al-Abbasi, in Volume 2 of his *Travels of Ali*

The dovecotes in House One are arranged around a square-based, two-part receptacle, hand-fashioned of mud mixed with straw, which Ibrahim referred to as a *şafaṭ* (**fig. 10**). The bottom half of the structure functions as a silo to hold grain loaded through an opening in the top half, which functions as a storage compartment for food items such as cheese, eggs, and milk that would need to be kept relatively cool. The *şafaṭ* in its present condition (the top has broken off and lies nearby) stands 1.7 m tall. Originally it would have stood a little over two meters. In the course of conversations with other residents of the neighborhood, I encountered a surprising degree of variation in terminology: though primarily referred to as a *şafaṭ*, this structure is also called a *mikabba* or, especially by the older members of the community, a *mikhwal*. (It should be noted that the term *mikhwal*, however, most commonly refers to a mud trough for livestock feed, as Henein documented [1988: 54 and pl. 10].)

Just south of the *şafaṭ* are two storage bins, also hand-made of mud and straw, about 0.7 cm in thickness. One of the bins is a tapered cylinder 1.20 m high, measuring 0.60 m in diameter at the base and tapering inward to 0.45 m at the top. The other is nearly square at its base of 0.80 x 0.77 m, flaring outward at the top to 0.85 x 0.86 m. The bins, Ibrahim explained, were used to hold milk jars and bread.

Built against the southeast corner of the courtyard is a simple cooking installation, known as a *kanuun*, constructed of a few mud bricks loosely forming a circular hearth (see **fig. 40** in House Three below; discussed in Houses Two and Three, below). Ibrahim informed me that this part of the courtyard functioned as his grandparents' simple kitchen.

A cow and a few sheep were kept, tethered, in the northern remainder of the courtyard. (**Figure 11** illustrates a similar arrangement at a neighboring house in the village.) During the

Bey: In Morocco, Tripoli, Cyprus, Egypt, Arabia, Syria, and Turkey, between the years 1803 and 1807 (English publication of 1816: pl. XLVI) and described by Lane (1895: 31).

day the animals were taken out to work and graze in the fields. Farming equipment was also stored in this multifunctional space; today three old plows remain (**fig. 12**). That the animals and the household grain were kept at the far back of the property was likely a security measure.

Thus the layout of House One, built in the late nineteenth century, is essentially a walled enclosure, comprising a single room built against the enclosure wall and surrounded on three sides by open area. I did not observe a lavatory facility in or around the house. Ibrahim explained that the neighboring field was used for that purpose. Water was supplied by the canals.

A Walkthrough of House Two: Upper Egypt

A block south of House One (in the village of Al-Biirat), bordering a stretch of sugarcane cultivation on its south, is House Two, which belonged to Ibrahim's father, a *fallaah*, whom I will call Ahmed (**fig. 13**). Ahmed built the house upon his marriage in the early 1940s. The most recently built of the houses I visited, it exhibits a number of modernizations that contrast sharply with its traditional features; it is because of its transitional character that I have selected it for description here. Although Ibrahim was born and raised in the house, along with two sisters and three brothers, the building has remained unoccupied since his father's death in 1997. (Ibrahim owns the property, having bought out his siblings, who live in neighboring villages in Qena and in the governorate of Aswan.)

The house has no enclosure wall. It is constructed of mudbrick upon a red-brick foundation (approximately 0.5 m in height). Ibrahim was unaware of what may account for his father's use of red-brick in the foundation (whether it may be, for example, the result of Ahmed's exposure to urban/western architecture during the Second World War). The exterior of the house, with the exception of an open court where animals were kept (discussed below), is plastered,

white-washed, and decorated with a pinkish dado. **Figure 14** shows the red-brick foundation visible beneath a portion of dado and worn plaster. Considerably larger than House One, the house has two stories sharing a nearly identical layout, totaling 320 m². The ground floor measures 19 m north-south by 9.8 m east-west. There are twelve glass-less windows in the house, with painted four-leaved wooden shutters (**fig. 15**), and a square clerestory window admitting light and air (**fig. 16**). In the parts of the house that are roofed, the roof is flat, made of a base of halved palm trunks and reed matting, whitewashed on the underside (**fig. 17**; also see **fig. 15: top**, and **fig. 16**). Upon this foundation sits a layer of plastered mudbrick, in a sturdy construction that supports a second story. Interior walls of most of the rooms bear weathered traces of also having been white-washed. These are painted with simple embellishments, such as outlines around doorways; floral motifs are found on the walls of the bedrooms (**fig. 18**; also see **fig. 15**). Flooring on the ground level and on the second story is made of mudbrick covered over with plaster (as in **fig. 15: top**, and **fig. 18**).

Electricity was not installed at the time the house was constructed but was added at some later point. **Figure 19** displays soot traces on the wall of an un-white-washed room, formerly a kitchen (discussed below), where a kerosene lamp had been affixed in the early years of the house's history, in contrasting juxtaposition with an electric switch patched onto the opposing wall.

House Two, along with three neighboring houses, forms a cul-de-sac at the end of a small, unpaved street. The cul-de-sac features two mudbrick *maṣṭabas* under a cluster of shade trees; a traditional, round mudbrick bread oven (*furn*) (**fig. 20**; and illustrated by Henein [1988: pl. 32 and fig. 149]) in a semi-enclosed, plastered mudbrick shelter that provides shade and protection from the wind; and a ceramic water jar (*zir*) in a wooden stand (**fig. 21**), also within

the shelter. These amenities are used communally by the residents of the cul-de-sac, along with a traditional, circular stone mill that originally belonged to Ibrahim's grandfather and which Ahmed brought to House Two from House One. The mill sits next to a modern cement power pole in front of the house, accessible to any of the neighbors, although it is now seldom employed given the convenience of store-bought flour and bread (**fig. 22** and see **fig. 14**). Henein provides illustrations of this type of traditional mill (1988: pl. 32c and p.161: fig. 152). Chores, too, are occasionally shared, one household baking bread in the *furn* for the neighboring households. Ibrahim reported that the neighbors often socialize in the area of the cul-de-sac whether or not they are attending to routine tasks. A small anthropoid figure (about 20 cm tall), crudely rendered of shells and pebbles, is inconspicuously set into the mud-plastered wall of the enclosure where the *furn* is located (**fig. 23**)—an apotropaic device “to provide protection for the neighborhood,” explained Ibrahim.

House Two has one entrance, on the east, facing the cul-de-sac. The entrance door measures 2.3 m high by 1.5 m wide. Like the door of House One, it is made of panels of acacia wood, set in a frame of the same material. Two wooden structural supports are set horizontally, sandwiching a traditional lock and key mechanism (**fig. 24**). The door opens into a long, high-ceilinged, rectangular hall—a vestibule—measuring 8.8 m east-west by 3.0 m north-south, at the far end of which is a staircase to the upper floor. The staircase and stairwell are built of red brick, plastered, whitewashed, and painted with a pinkish dado corresponding to that of the house's exterior (**fig. 25**). The comparatively fresher paint in this area reflects repainting that was in progress at the time of Ahmed's death, Ibrahim reported. The space under the staircase houses two screened storage compartments (**fig. 26**), which held old cans of paint at the time of my visit. Off the vestibule on the south is a north-south corridor extending 4.3 meters, terminating in a

wooden door to an open court where animals were kept (discussed below). Above this door is a square clerestory window of about 40 cm² at a height of 3.4 m, or 40 cm below the level of the ceiling (see **fig. 16**). This opening, like those I saw in House One, was made to admit air and light.

Leading off the vestibule on the north are two contiguous bedrooms: the easternmost and largest, where Ahmed and his wife slept, measures 4.8 m east-west by 3.55 m north-south (**fig. 27** and see **fig. 15**); the westernmost measures 3.6 m east-west by 3.55 m north-south. A bedroom measuring 3.9 m east-west by 4.2 m north-south leads off the vestibule on the southeast, while an empty room of 3.3 m east-west by 4.3 m north-south, southwest of the vestibule, is accessed via the north-south corridor. This un-white-washed space, Ibrahim explained, was originally a kitchen (see **fig. 19**).

Use of the kitchen was seasonal. In the winter Ibrahim's mother cooked indoors here on a *kanuun* (a simple hearth constructed of a few bricks loosely arranged on the ground, used both indoors and outdoors), later updating to a kerosene burner. In warm weather she would assemble, and cook on, a *kanuun* in the courtyard. She also employed a portable mud brazier for making tea. In the winter the brazier would be placed in the youngest children's bedroom at night to provide warmth. At any time of year, it could be used to warm the room for a household member when bathing. The brazier was located in the courtyard at the time of my visit; Ibrahim demonstrated its use by making tea (**fig. 28**). Henein documents the use of the *kanuun* indoors for both cooking and warmth (1988: 23-25, fig. 10); thus it appears that both the brazier and the *kanuun* were portable and employed where needed.

The southern end of the corridor terminates with a door, over which is the square clerestory window mentioned above (see **fig. 16**). The doorway leads into a large, partially

roofed court (8.7 m east-west by 6.0 m north-south) where Ahmed stored grain and kept a *gamoosa* (water buffalo), a cow, and pigeons. Only the western half of this court is protected by a light roof of quartered palm trunks, palm branches, and reeds, providing shelter to the animals and a measure of shade (or wind protection) to the household. The court, somewhat splattered with mud and dung, is neither plastered nor white-washed. In the northwest corner is a wide dovecote designed with a horizontal arrangement of cubby holes (**fig. 29**), and in the southwest corner is the bottom part of a square-based *safat*—a two-part silo/storage bin of the kind noted in House One, above), the top portion having broken off (**fig. 30**).

I accessed the house's second story via the staircase, which makes a 90-degree turn midway, terminating in an unroofed open space corresponding to (i.e., directly over) the downstairs vestibule. The stairwell, too, is unroofed, admitting natural light into the vestibule (see **fig. 25**). The second story measures 12.0 m north-south by 8.7 m east-west and bears a layout identical to that of the ground floor, minus the animal court—that is, four rooms flank a central space, two on the north and two on the south (Fakhoury [1987: 18] noted the similarity between the floor-plans of first and second stories in traditional houses in Kafr el-Elow, near the Delta). The rooms on the northwest and southwest, respectively, are bedrooms whitewashed and painted with floral motifs similar to those of the master bedroom downstairs. The other two rooms were never finished (neither plastered nor whitewashed and never occupied); it was intended that they be available for any of the sons who so wished to occupy with their wives upon marriage.

I could detect no bathroom facility on either floor of the house. Ibrahim indicated a region outside the enclosure wall, abutting the field, where he explained there is a brick-lined

hole with open bottom that serves as a lavatory. A wooden board covers the opening when it is not in use; the cavity is emptied periodically.

Mahgoub (2000: 17) discusses the concept that the traditional Egyptian house became over time increasingly less a unit of production. It is worth observing in this respect that in House Two—the “newest” of the houses presented here, having been built in the early 1940s and exhibiting “transitional” features of modernization—some traditional modes of production (for example, bread-baking in a *furn* and grinding grain into flour with a hand-mill), as well as some traditional means of socializing (such as sitting with visitors on *maṣṭabas* built for that purpose just outside the house’s entrance, or receiving visitors in a vestibule just within the house’s entrance), seem to have been transferred to the communal cul-de-sac. That is to say, the cul-de-sac appears to have taken on functions that earlier would most likely have been an integral component of the house and household, underscoring House Two’s transitional character.

A Walkthrough of House Three: Upper Egypt

House Three is also located in Al-Biirat, at the southern end of the village, abutting a field of sugarcane. It belongs to a *fallaah* I will call “Salaama,” who resides there with his wife and young son. The house was originally built by Salaama’s grandfather, Azab, also a *fallaah*, in the late 1920s, and was passed on to Salaama’s father (now deceased). Thus three generations have resided in the house and additions were made to the original core over time, resulting in a rather complex layout. Interestingly, Azab and his brother constructed their respective houses next to each other; the buildings are connected by a shaded breezeway and small communal area serving both households (Henein [1988] documented connected houses among family members

in the Coptic community of Mārī Girgis). Azab's brother is deceased and his house (directly west of Salaama's) is now occupied by descendents.

Salaama's house is a sprawling, flat-roofed, mudbrick construction of one story. Its original ground plan was long and linear, much like that of House One (above), running east-west, with only three fully enclosed rooms (the bedrooms and a storage room), the largest space, a court at the eastern end, devoted to farm animals (**fig. 31** ground plan). Salaama's father transferred the animal court to a much larger rectangular expansion that he added on the south (see **fig 31** ground plan). The former animal court became a multifunctional open area used by the family. In the house's newer accretions some red-brick construction is apparent.

The house has earthen floors. With the exception of the vestibule, the northwestern extension of the house is roofed—that is, the bedrooms, living room, and kitchen. Roofing is constructed of split-palm-trunk beams on which sits a layer of matting of palm ribs and reeds, plastered over with mud (**fig. 32**). Though portions are dilapidated, the roof is important to the family as a place to store animal dung and straw; it also houses a pigeon “room” (literally a four-walled room, as opposed to a cubby-holed dovecote), constructed for sheltering pigeons. Staircases at roughly the western and eastern ends of the house provide roof access.

Salaama showed me through a two-leafed main door (**fig. 33**) that opens into a porch area and communal room shared by his household and the relatives in the adjacent household. In **Figure 34**, Salaama's front entrance is to the left of the communal room, where there is a low wooden bench for socializing, along with stored supplies (sacks of rice, flour, etc.). The porch roof is a light construction of quartered palm trunks overlaid with palm branches, providing shade.

The single entrance to Salaama's house is located in the northwest. The door, made of acacia wood and measuring 1.2 m wide by 2.3 m high (photograph unavailable), accesses an open transitional area (a vestibule) with a two-way mudbrick staircase directly ahead, leading to the roof (**fig. 35**). A few niches permeate the walls of the vestibule—the smaller ones for storage and a large one that originally housed a kerosene lamp (**fig. 36**). Storage cupboards are built in to the solid staircase (**fig. 37**).

Off the vestibule to the south are two fairly small contiguous rooms that originally functioned as the bedrooms of Azab and his wife, and of their three children. Today Salaama and his wife occupy the (master) bedroom on the west, the eastern room being their son's. I was not invited to view these rooms but I estimate their measurements to be 3.7 m east-west by 2.5 m north-south, and 2.75 m by 2.75 m, respectively. From the outside it appears that the master bedroom has a window with double-leafed wooden shutters on the west wall and a small aperture high up in the wall for additional ventilation (see **fig. 34**).

Directly east of the two bedrooms is the *diwaan*, or living room, where guests are received. It is furnished with low, cushion-covered wooden benches, and because electricity has been installed, it also features a television set and a telephone, contrasting with two soot-smudged niches that originally housed lamps and are now used for sundry storage (**fig. 38**). The *diwaan* is not fully enclosed, lacking a wall on the north. It measures 4.0 m east-west by 1.7 m north-south.

Next to the *diwaan* on the east is another three-walled room, the kitchen (**fig. 39**), measuring 2.25 m north-south by 3.2 m east-west. Although it contains a set of butane burners and palm-reed storage compartments holding pots and pans, a significant portion of the cooking,

Salaama explained, is done outdoors on a *kanuun* in the adjacent open court (**fig. 40**). Household water is retrieved from a communal (government-installed) faucet in the neighborhood.

The open court is nearly square, measuring 5.2 m north-south by 5.4 m east-west. Originally an animal pen, it features a solid (if dilapidated) brick staircase to the roof and pigeon room; utilitarian tarps are hung to separate an area of storage (**fig. 41**). A new addition in the court's northeast corner is the fully enclosed red-brick lavatory with squat toilet (**fig. 42**).

The animal enclosure added on the southeast by Salaama's father (see **fig. 31**) was constructed to maximize security. It houses not only farm animals in a large L-shaped area, but also an oven room with the family's silo and a traditional *furn*. These valuable commodities were accessed by a single entrance at the southeastern corner of the original property (i.e., the southeast corner of the family's open court) (see **fig. 31**). From here one needs to proceed a lengthy distance southward through an elongated pen for small animals, then westward through the cattle court, before entering the oven room through its solid acacia-wood door with pivot socket on the southwest (**fig. 43**). It is worth noting that the original northern court, having originally housed Azab's farm animals, is located at the far back of the property (as is the animal court in House One, above), likely as a security measure. Also of relevance is the pragmatic location of the silo in the same room as the oven.

In the oven room Salaama's wife demonstrated her use of the *furn* (**fig. 44**) and showed me the results of her day's baking, which she stores in the long enclosed room built for this purpose in the northeast corner of the house (**fig. 45**). Here she also dries corn-on-the-cob, which will later be ground for flour and housed in the *ṣawma^{ʿa}* (silo) conveniently located, as noted above, in the oven room (**fig. 46** and see **fig. 31**). This silo, like the *ṣafaṭ* described above, is hand-fashioned of mud mixed with straw, and has two parts: The bottom part stores grain that is

loaded through the top part. In contrast to the square-based *ṣafaṭ*, however, the *ṣawma^ca* is cylindrical and stores only grain, as opposed to other food items. In the Upper Egyptian Coptic village of Mārī Girgis, Henein recorded two-part cylindrical silos, identical to the *ṣawma^ca*, bearing the names *dōr*, referring to the bottom receptacle, and *khōkha*, referring to the top (Henein 1988: 49-52). Further investigation would hopefully shed light on the reasons for this distinction in terminology, and on the geographical ranges of these terms. The family purchases sacks of wheat flour in the village, to be stored in the communal room.

A Walkthrough of House Four: Lower Egypt

House Four is located in Lower Egypt, in the Delta village of Mīt Khodeir (governorate of Daqahliya), approximately 40 kilometers southwest of Port Said. Mīt Khodeir is one among a string of agricultural villages (including, for example, Al-Gamaliya, ^cIzbat Al-Sharabas, and ^cIzbat Salim Al-Misayri) lining a substantial canal leading off the Damietta branch of the Nile. Fields of cotton, *barsīm* (clover), and rice surround the settlement. According to the *Magma^c al-lugha al-^crabiyya* (Arabic Language Consortium) the word *mīt* connotes “harbor” and is a designation commonly applied to villages along the river or along canals. House Four stands at the edge of the cultivation, east of a field of *barsīm*. A small secondary canal flows just five meters from the eastern and northern sides of the house on its way to the fields, but in recent years it has been channeled through a buried pipe so is no longer exposed. Prior to the installation of the pipe, two small bridges made of woven palms branches crossed the canal, allowing foot traffic to and from the fields. Adjacent to the house on the south are two neighboring houses, all three built so close as to be almost touching. Just south of the third house is a mosque.

Built around 1920, House Four is occupied today by an elderly woman I will call “Farḥat.” Farḥat’s father, Tawfiiq, originally owned the house and with his wife raised five children there (Farḥat has a share in the property, along with two living siblings; because she is widowed and has no children, she currently resides in the house). Tawfiiq was by profession a *nazir il-‘izbah*—that is, he oversaw the cultivation of a landowner’s crops on an *‘izbah* (plural *‘izab*, discussed above). His position of responsibility may account for the red-brick construction of the house (**fig. 47**), fired red brick having become a symbol of status in the early twentieth century (Mahgoub affirms the appearance of high-status red brick in the *‘izab* of the Delta [2000: 9]). It is additionally possible that red brick was chosen because it is less prone to erosion than unfired mudbrick, as explained above, making it a better choice for the wetter conditions in the Delta. Today, however, the structure has become so degraded that Farḥat and her siblings plan to sell their shares of the property to a married nephew who intends to demolish it and rebuild on the same lot. I found that parts of this house were impassable.

The house is nearly rectangular, measuring 7.5 m x 13.5 m, or 101.25 m² (**figs. 48** and **49**). The walls, just under 3.0 m high, are exceedingly thick (0.6 m), constructed to keep the heat in during the winter, Farḥat explained. There are four windows, each originally with screens (to keep out mosquitos) and single-leafed wooden shutters (see **fig. 47**), two of which have been plastered over in order to retain heat. In earlier years the exterior walls were kept mud-plastered, while the interior walls were kept both plastered and white-washed. After Tawfiiq and his wife passed away, however, the house fell into disrepair. The now-peeling plaster and white-wash are severely subsumed by moisture and salts seeping through the corroding red brick (e.g., **fig. 50**).

House Four has an earthen floor and a flat roof. The roof is constructed of “western” 4” x 4” beams (possibly imported [Castel 1984: 138] from Finland, Sweden, or the USSR [Ayrout

1963: 116]) overlaid with palm-rib matting, mud-plastered on the topside and white-washed on the underside (**fig. 51**). The top of the roof is covered, except for one corner where chickens were once kept, with rain-proof plastic tarp (see **fig. 47**; cf. tarp used in House Three above) followed by a thick layer of rice straw to absorb rainwater (Lozach described straw roof-topping in the Delta in the early twentieth century [1930: 28]). The straw requires replacing every year to prevent molding. The poultry were raised in an enclosure (a coop) of wattle and daub, approximately 4 m² occupying the southeast corner of the roof. A metal screen was embedded in one side for ventilation.

The house has five rooms. Noticeably lacking is an open court area, possibly (if not probably) because the owner, Tawfiq, did not work the land himself, but rather held a supervisory position and had no need to keep livestock. The single entrance, in the northwest corner, presents a western-influenced double-leafed wooden door, 1.2 m wide and 2.0 m tall, with metal hinges and metal bolt (**fig. 52**). **Figure 49** (above) shows the house (the entrance door is obscured by a small tree), dwarfed against the backdrop of a modern, multi-storied cement-brick building nearby. Farhat reported that formerly two mudbrick *maṣṭabas* abutted the house's north wall, flanking the entrance, where the household would often greet passing neighbors or sit enjoying the afternoon shade. The *maṣṭabas* were removed after the canal was covered, because the route became subject to increased foot traffic and passing vehicles.

Proceeding through the entrance, one enters a transitional space, a vestibule, measuring 2.5 m by 3.0 m. It is this area that juts out from what is otherwise the house's rectangular layout (see **fig. 48**). The line of sight from the entrance is restricted by the opposite (south) wall of the vestibule, so that one cannot see beyond it to the interior of the house. A cushioned wooden bench against the vestibule's south wall provides seating. Farhat recalls that until recent years the

household water was stored in a *zir* on a wooden stand in the vestibule, opposite the entrance. It is interesting to contemplate the reason for the *zir*'s location here: perhaps it offered refreshment to those entering the house from the heat outside. On a more practical note, it was probably easiest to keep the *zir* (which would have been very heavy when full) near the door so that it would not have to be carried through the house. (Henein documented, in Upper Egypt, the placement of the *zir* fairly near the entrance [1988: figs. a and b].)

Because Farḥat can no longer carry the *zir*, it is no longer used. The household water is obtained, with the help of a neighbor, from a public faucet located in front, and just east, of the house. This faucet may have been placed in such fortunate proximity to the property because of Tawfiq's status as *nazir al-^cisbah*. Farḥat currently stores her water in the kitchen, in a tall metal barrel with a spigot. She washes here, using a small metal bucket to catch the wash-water, which she then empties outside the house in front of the entrance to help keep the dust down.

Just east of the entrance is a staircase, now in disrepair and impassable, leading to the roof. The staircase is solid (rather than free-standing), its foundation constructed of plastered mud brick. Three beams of split palm trunks are laid parallel upon this foundation. The steps are built up from the beams with red brick and plastered over with mud. Use is made of the space beneath the stairs, where there is a small door to a closet-sized (one square meter) chamber housing a squat toilet (**fig. 53**). Farḥat reported that light inside the dark interior of the chamber is provided by a small kerosene lantern that hangs on the wall outside, ready to be carried within (see **fig. 53**, above). The brick-lined holding tank under the ground is periodically emptied by a man whose job it is to conduct waste removal.

The vestibule at the house's entrance leads into a rectangular hall area from which one can access all the rooms of the house. To the east are two contiguous bedrooms, each with a

door. The bedroom on the north measures 3.8 m by 2.8 m, the one on the south measuring 3.8 m by 3.0 m. Leading off the hall to the south is the rectangular kitchen of 3.2 m by 2.3 m, spacious probably because it houses a *ṣawma^ca* (a silo of the type seen above in House Three) and an exceptionally large plastered mudbrick *furn* (1.0 m by 2.3 m; photograph unavailable). This oven, though its baking cavity is of standard dimensions, is a large rectangle spanning the width of the room, unlike the rounded *furns* I saw associated with other houses (see, e.g., **figs. 43** and **44** in House Three above). Farḥat explained that it was constructed this way to function as a warm place to sleep in cold weather. I estimated that the expanse of the *furn* would accommodate one adult, or two children (Lane describes this type of large *furn*, and its use for sleeping, in rural houses of Lower Egypt [1836: 31]). Farḥat recalled that it was mostly the children of the household (she and her siblings when they were young) who slept on it, cushioned by reed mats, during the winter. The heat of the day's baking would keep the entire structure comfortably warm through the night.

That the household silo (*ṣawma^ca*) is located not only inside the house but within the kitchen may be significant. In contrast to Houses One, Two, and Three, this Delta house, belonging originally to a *nazir al-^cizbah*, did not require the presence of an open court for grain storage, livestock, or farm equipment.

Following below are 53 figures supporting this Appendix.

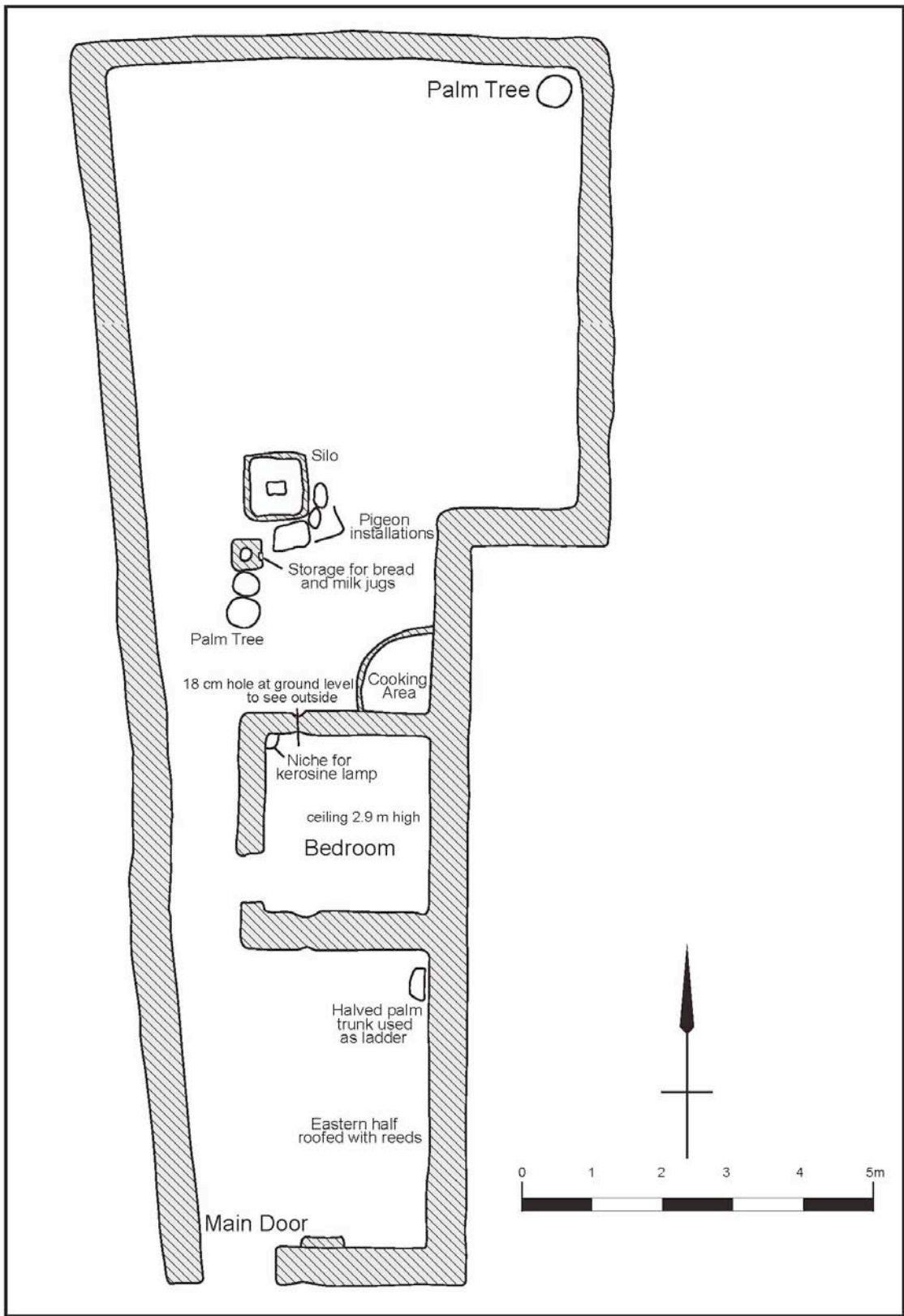


Figure 1. House One (Al-Biirat): Ground plan (drawn by author; digitized by Hassan Ramadan).



Figure 2. House One: Entrance door with pivot socket and original lock and key (photograph by author).



Figure 3. House One: Date palms grow in courtyard, just inside the entrance (photograph by author).



Figure 4. House One Bedroom: door with traditional lock; in wall at left, secret compartments opened up; at upper right, opening in wall for ventilation (photograph by author).



Figure 5. House One Bedroom: Wattle-and-daub roofing (view from beneath) (photograph by author).



Figure 6. In Al-Biirat: Floating brick stairs supported by halved palm trunk (far side) and a single train-track rail (photograph by author).



Figure 7. House One Bedroom: Small mud shelf supports kerosene lamp (photograph by author).



Figure 8. House One: Tall dovecote with embedded pottery vessels vertically aligned (photograph by author).



Figure 9. Top and bottom: In Al-Biirat, a large (almost monumental) dovecote, once part of a late-nineteenth-century house (photograph by author).



Figure 10. House One: Hand-fashioned mud *šafaṭ* (the broken top lies to the right). The bottom functions as a silo; food items are stored in the top, on the platform dividing the two parts (photograph by author).



Figure 11. Al-Biirat: Livestock work in the fields during the day and are brought back to the court in the evening (photograph by author).



Figure 12. House One: Old plows remain in northern courtyard (photograph by author).

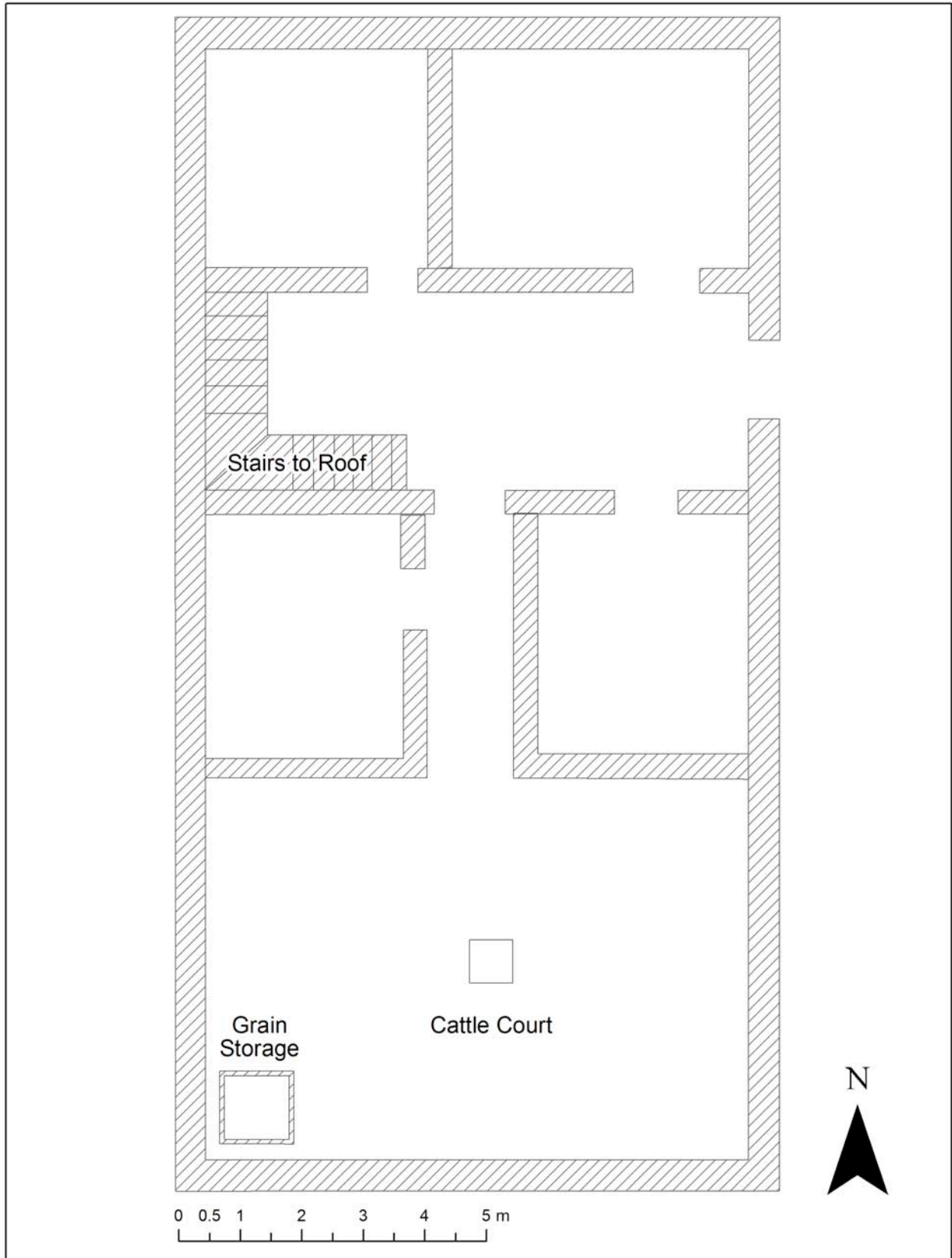


Figure 13. House Two (Al-Biirat): First-floor ground plan. Second-floor layout is identical, minus cattle court (drawn by author; digitized by Rebekah Miracle).



Figure 14. House Two: Red-brick foundation visible beneath exterior plaster (photograph by author).



Figure 15. House Two, top and bottom: master bedroom: Windows with four-leafed wooden shutters (photographs by author).

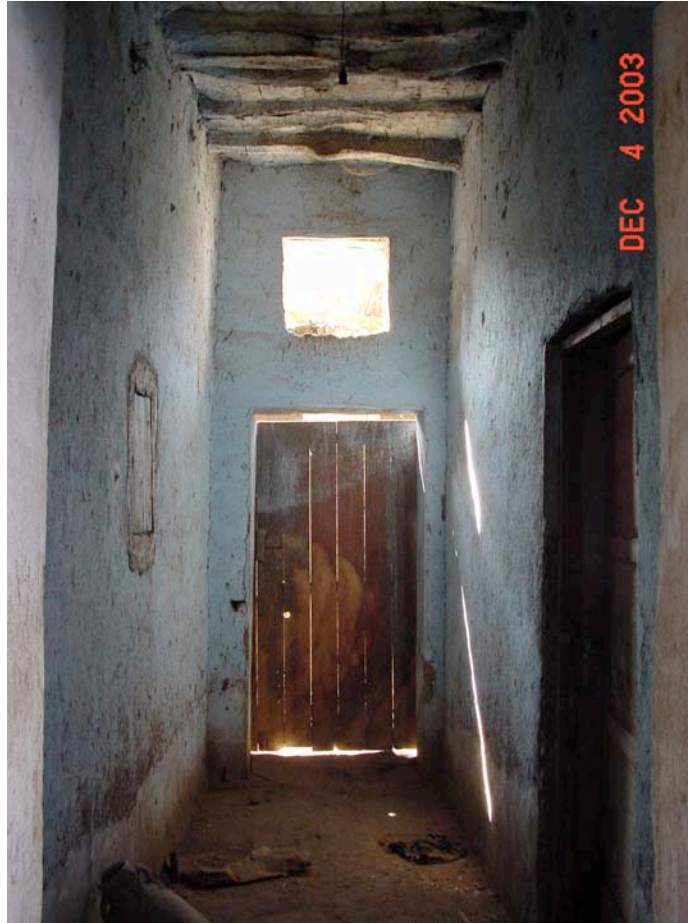


Figure 16. House Two: Clerestory window leading to court (photograph by author).



Figure 17. House Two: Roofing made of halved palm trunks and reed matting, plastered and whitewashed (photograph by author).



Figure 18. House Two: Master bedroom: Walls painted with floral motifs; flooring is of plastered mudbrick (photograph by author).



Figure 19. House Two: A dangling electric switch has been patched on at left, opposite a wall bearing soot traces from a kerosene lamp (photograph by author).



Figure 20. House Two: A communal *furn* in a semi-enclosed shelter in the cul-de-sac (photograph by author).



Figure 21. House Two: A traditional *zir* in a wooden stand in the sheltered area of the cul-de-sac (photograph by author).



Figure 22. House Two, top and bottom: A traditional stone mill in front of the house (next to modern cement power pole), available to the neighbors (photographs by author).



Figure 23. House Two: Apotropaic figure of shells and pebbles set into wall of enclosure (photograph by author).



Figure 24. House Two: Entrance door with traditional wooden lock and key (photograph by author).



Figure 25. House Two: Staircase leading to second floor (photograph by author).



Figure 26. House Two: Screened storage compartments make use of space under staircase (photograph by author).



Figure 27. House Two: Master bedroom with floral motifs (photograph by author).



Figure 28. House Two: Tea prepared on brazier in courtyard (photograph by author).



Figure 29. House Two: Horizontally arranged dovecote in courtyard (photograph by author).



Figure 30. House Two: A şafağ in courtyard; the top has completely broken off (photograph by author).

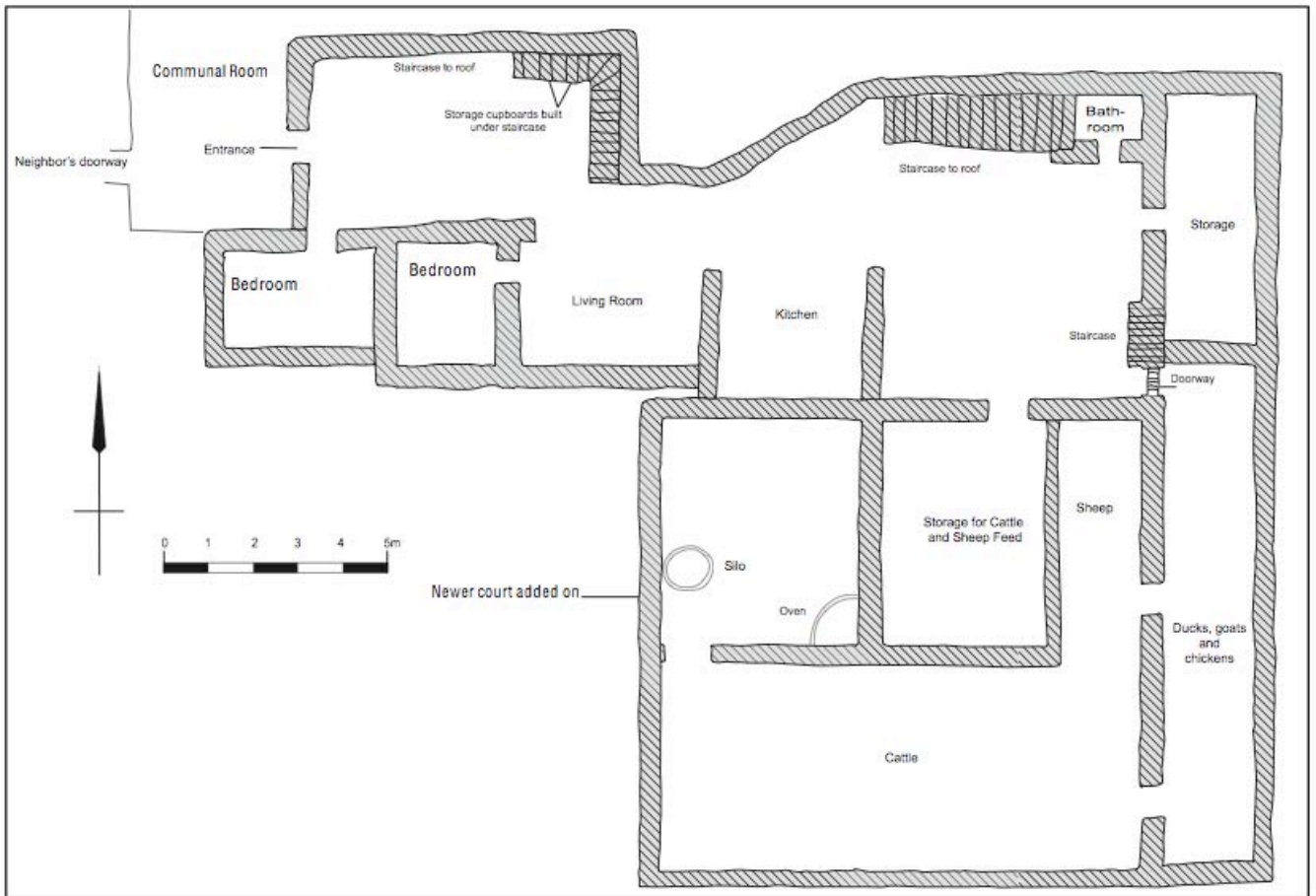


Figure 31. House Three (Al-Birat): Ground plan (drawn by author; digitized by Hassan Ramadan).



Figure 32. House Three: Roofing of split palm trunks, palm ribs, and reeds, plastered with mud (photograph by author).



Figure 33. House Three: Two-leafed main door (photograph by author).



Figure 34. Top and bottom: Communal room shared by adjacent households; Salaama's entrance door is at left (top) (photographs by author).



Figure 35. House Three: Vestibule with staircase ahead and niches at left (photograph by author).

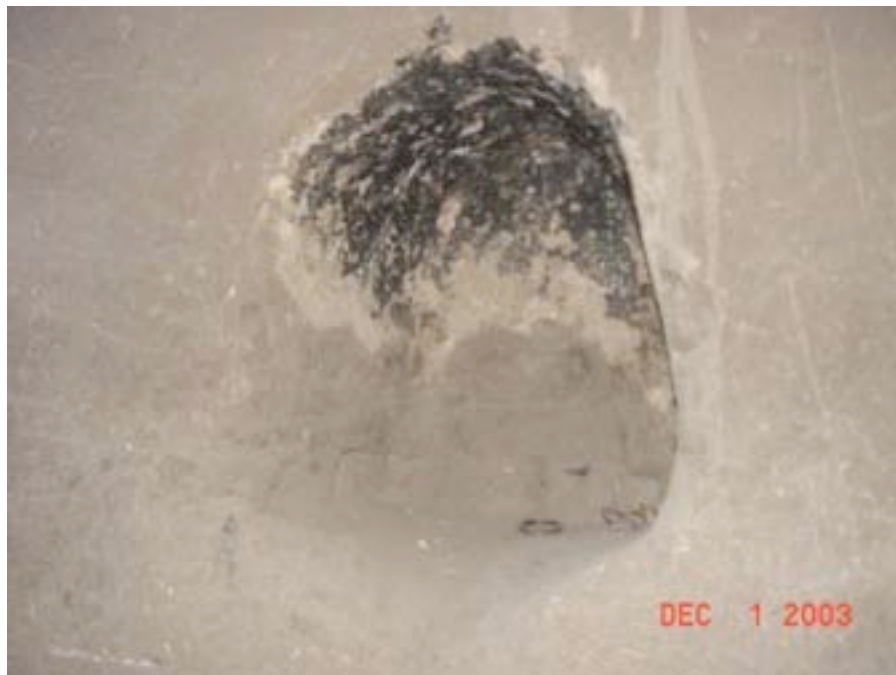


Figure 36. House Three: Soot-stained lamp niche in vestibule (photograph by author).



Figure 37. House Three: Cupboards are built into the space beneath the solid staircase (photograph by author).



Figure 38. House Three: The *diwaan* features a television and telephone, contrasting with wall niches that originally housed kerosene lamps (photographs by author).



Figure 39. House Three: The kitchen houses simple equipment, including butane burners and palm-reed storage compartments (photograph by author).



Figure 40. House Three: A *kanuun* in use in the open court (photograph by author).



Figure 41. House Three: In open court, mudbrick staircase to roof and pigeon room. Utilitarian tarps hang at left (photograph by author).



Figure 42. House Three: A newer addition: the red-brick lavatory with squat toilet (photograph by author).



Figure 43. House Three: Oven room with acacia door with pivot socket (photograph by author).



Figure 44. House Three: Center and Bottom: Salaama's wife bakes bread in the *furn* (photographs by author).



Figure 45. House Three: A storage room where fresh-baked bread and drying corn-on-the-cob are kept (photograph by author).



Figure 46. House Three: Hand-fashioned mud şawma'ca (silo) in oven room (photograph by author).



Figure 47. House Four: The house is constructed of plastered red brick (photograph by author).

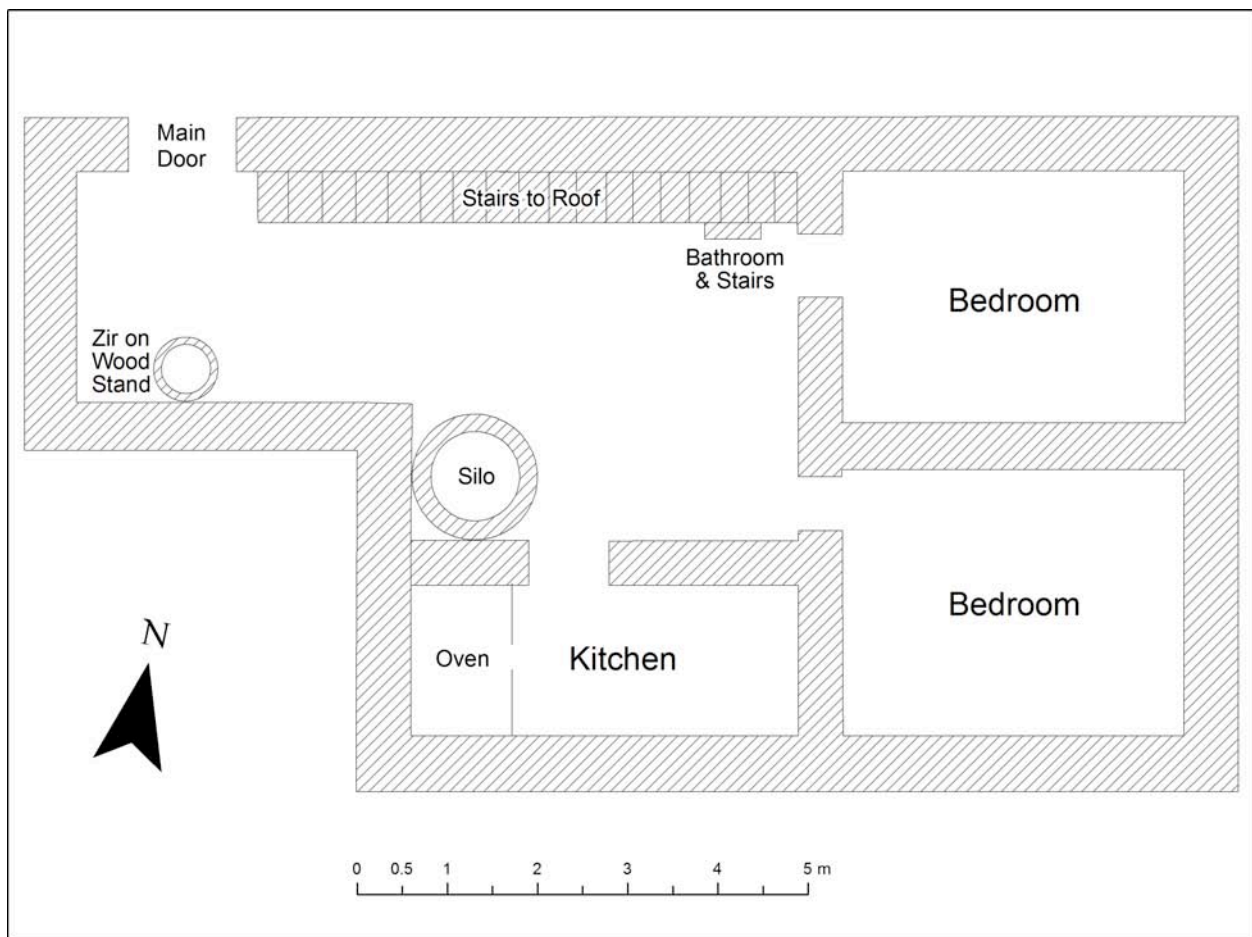


Figure 48. House Four: Ground plan (drawn by author; digitized by Rebekah Miracle).



Figure 49. House Four, built around 1920, is a traditional, flat-roofed red-brick construction; newer, multi-storied cement-brick buildings loom in the background (photograph by author).



Figure 50. House Four: The interior walls exhibit the consequences of moisture and salts (photograph by author).



Figure 51. House Four: The roof of western 4" x 4" beams overlaid with palm-rib matting, mud-plastered on top and white-washed on the underside (photograph by author).



Figure 52. House Four: Western-influenced double-leafed door on metal hinges, with metal bolt (photograph by author).



Figure 53. House Four: The lavatory is built into the space beneath the stairs; a small lantern hangs nearby, ready to be carried within to light the closet-sized interior (photograph by author).

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