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UNIVERSITY OF CALIFORNIA
RIVERSIDE

Toward a Biography of Place at La Milpa North

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Anthropology

by

Eric James Heller

December 2018

Dissertation Committee:
Dr. Wendy Ashmore, Chairperson
Dr. Karl Taube
Dr. Thomas C. Patterson
Dr. Fred Valdez Jr.

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2018

The Dissertation of Eric James Heller is approved:

Committee Chairperson

ACKNOWLEDGEMENTS

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In addition, there were many folks who served as essential personnel, friends, and staff during the field work and laboratory components of this project. I thank Eric Novelo, a local field research assistant who was an integral part of this project from its very first days in the field. His instinct, skill, intelligence, professionalism, and passion for knowledge are unparalleled. I thank him most sincerely for his tremendous contributions to this project through his labor and intellect. Anastasia Kotsoglou, who started on this project as a field school student, quickly became an equal collaborator through her insight, creative thinking, and boundless energy. Our many conversations in and outside of the field improved this work immensely. Alvin Rosa-Figueroa served as staff on this project for several seasons at the height of its intensity. His strength of character, natural leadership ability, and passion were absolutely essential to the success of this work.

I also have to thank the several hundred Programme for Belize Archaeological Project directors, staff, and students who contributed. First among them is my undergraduate advisor, Dr. Lauren Sullivan, who not only introduced me to Mesoamerican archaeology, but also provided significant encouragement, advice, and expertise over the course of the project. In addition, I thank Rissa Trachman, David Hyde, Brett Houk, Stanley Walling, Marisol Cortez-Rincon, Brandon Lewis, Jim Brady, Robyn Dodge, and Deborah Trein, who each made unique contributions to my research. Thanks are due also to the several hundred undergraduate and graduate students who contributed to the field and laboratory research components of this research as part of their education or as volunteers. These folks are truly the engine that empowered this research, and I had perhaps more to learn from them as I had to teach them.

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DEDICATION

For Eric Novelo, and his family, who are the true inheritors of all contained within these pages, and so much more.

and

For Sasha, whose light and love guides my way, always.

ABSTRACT OF THE DISSERTATION

Toward a Biography of Place at La Milpa North

by

Eric J. Heller

Doctor of Philosophy, Graduate Program in Anthropology
University of California Riverside, December 2018
Wendy Ashmore, Chairperson

This dissertation examines La Milpa North, an ancient Maya hilltop palatial compound built and occupied in the Late to Terminal Classic periods (ca. A.D. 600-950). Previously, several scholars proposed that this site is the northern node of a network of secondary centers arranged in a quadripartite pattern around the civic center of La Milpa intended to reflect the shape and function of a four-sided and three-tiered Maya cosmos. Through archaeological investigation, this project evaluates assertions of cosmological significance at La Milpa North. In so doing, this project aims to contribute to ongoing anthropological dialogues regarding our ability to detect and interpret meanings encoded in archaeological landscapes inscribed by the ideological and practical needs of ancient peoples. To address questions of intentionality and meaning in the built environment, this project adopts a biography of place approach. Though by nature incomplete and subject to revision, a biography of place endeavors to reconstruct a diachronic narrative of the

construction, use, and modification of space while simultaneously exploring the experiences, meanings, and senses of place of ancient social actors. Through this lens, La Milpa North is conceptualized as a multivalent place with which a diverse array of ancient individuals formed complex relationships and, in processes contingent on historical material circumstances, imbued landscapes with meanings.

In building a biography of place, this dissertation employs various analytical and theoretical frameworks to partially reconstruct aspects of the relationships that individuals formed with La Milpa North. Recognizing that numerous social, political, and economic contingencies structure relationships individuals build and maintain with places, this project situates the built environment and artefactual assemblages within broader local, regional, and interregional processes of social transformation. A long history of research in the Maya Lowlands, as well as the Three Rivers Region in which La Milpa North is located, provides excellent context and numerous analogous examples to further this effort. In addition, practice theory, political and ritual economy perspectives, and social landscape approaches are used to construct an interpretive framework for the archaeological data generated by this project so as to enable an understanding of the recursive processes involved in the production and reproduction of individuals, communities, ideologies, and social landscapes. Finally, to access elements of the embodied experiences of ancient peoples, this project utilizes digital reconstructions of the built environment to recreate experiences of moving through and interacting with the site prior to its abandonment. Together, these methods and theoretical

perspectives contribute to a reconstruction of the dynamic form, function, and possible meanings encoded into the built environment of La Milpa North.

In testing the hypothesis that La Milpa North is a node within a representation of the cosmos, I find additional lines of evidence to support previous interpretations, though several refinements are proposed. In addition, this research unearths deep articulations between cosmological beliefs, social relations, political power, and economic practices. As a ceremonial complex, administrative center, and the residence of a high-ranking non-royal elite household situated in a cosmologically significant location on the social landscape of a major polity, the architecture and assemblages of La Milpa North reflected and embodied the practical needs and ideological concerns of its builders, occupants, and surrounding community. It therefore provides a lens into the spatial, economic, and political practices of ancient Maya, and serves as a means to engage with broader anthropological dialogues regarding the role of systems of belief and ideology in shaping archaeological landscapes and our ability to perceive intentionality within ancient contexts.

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Chapter 1: Introduction

Through the lens of La Milpa North, an ancient Maya hilltop palatial compound in the hinterlands of a major center, this dissertation examines relationships between ancient Maya systems of belief and ancient social landscapes. Previously, several scholars proposed that La Milpa North, built and occupied in the Late to Terminal Classic periods (ca. A.D. 750-950), is the northern node of a network of secondary centers arranged in a cruciform pattern around the major urban center of La Milpa, an arrangement intended to reflect the shape and function of a four-sided and three-tiered Maya cosmos (Hammond and Tourtellot 2003; Tourtellot et al. 2000, 2002; Tourtellot, Estrada-Belli, and Hammond 2003). Through archaeological investigation, this project, the Xaman Witz Archaeological Project, evaluates assertions of cosmological significance at La Milpa North. In so doing, this research aims to contribute to ongoing anthropological dialogues regarding our ability to detect and interpret ancient meanings encoded in archaeological landscapes.

To address questions of intentionality and meaning in the built environment, this project adopts a biography of place approach. Though by nature incomplete and subject to revision, a biography of place endeavors to reconstruct a diachronic narrative of the construction, use, and modification of space while simultaneously exploring the experiences, meanings, and senses of place of ancient social actors (Ashmore 2009:158–

59). La Milpa North is conceptualized as a multivalent place, at which a diverse array of ancient individuals formed complex relationships and, through processes contingent on historical and material circumstances, imbued landscapes with meanings.

In building a biography of place, this dissertation employs practice theory, political and ritual economy perspectives, and social landscape approaches. This suite of perspectives creates an interpretive framework that links archaeological data to the relationships that ancient individuals formed with La Milpa North. Together, these approaches elucidate aspects of the production and reproduction of individuals, communities, ideologies, and social landscapes. Recognizing that numerous social, political, and economic contingencies structure relationships between individuals and places, this project endeavors to situate La Milpa North within broader local, regional, and interregional processes of social transformation. A long history of research in the Maya Lowlands and the Three Rivers Region, in which La Milpa North is located, provides the contexts for this research (e.g. Aylesworth & Valdez, 2004; Hammond, 1996; V. L. Scarborough, Valdez, & Dunning, 2003). Finally, to access elements of the embodied experiences of ancient peoples, this project utilizes digital reconstructions of the built environment to approximate experiences of moving through and interacting with the site prior to its abandonment. Together, these methods and theoretical perspectives contribute to a reconstruction of the dynamic form, function, and possible meanings encoded into the built environment.

In testing assertions of cosmological significance at La Milpa North, this project finds additional lines of evidence that support the cosmogram hypothesis, though I suggest several refinements and additional possibilities. In addition, this research unearths deep articulations between cosmological beliefs, social relations, political power, and economic practices. As a ceremonial complex, administrative center, and the residence of a high-ranking non-royal elite household, situated in a prominent position within the social landscape of a major polity, the architecture and assemblages of La Milpa North reflect and embody the practical needs and ideological concerns of its builders, occupants, and surrounding community. It therefore provides a lens into spatial, economic, and political practices of the ancient Maya. In addition, it engages with broader anthropological dialogues regarding the power of ideology in the formation of archaeological landscapes as well as our ability to perceive intentionality in these contexts. To contribute to this discussion, this research investigates interconnections between political-economic relations, cosmological ideation, and the social landscape of La Milpa for the ancient Maya.

Introduction to Mesoamerica

La Milpa North is located within the Central Lowland Maya region of Mesoamerica. From Latin roots meaning ‘middle-america’, Mesoamerica is a culture area encompassing Guatemala, Belize, El Salvador, central and southern Mexico, as well as parts of coastal Nicaragua and Costa Rica (Figure 1.1). Containing a wide variety of ecological zones, this region includes relatively dry and cool mountainous highlands of

Guatemala, hotter and wetter lowland seasonal rainforests in Eastern Guatemala and Belize, coastlines along the Pacific Ocean and Caribbean Sea, and low-lying scrub forests of the northern Yucatan peninsula (Joyce 2004). Diversity in topography, climate, and vegetation are equally matched by variability in resource availability, potentially

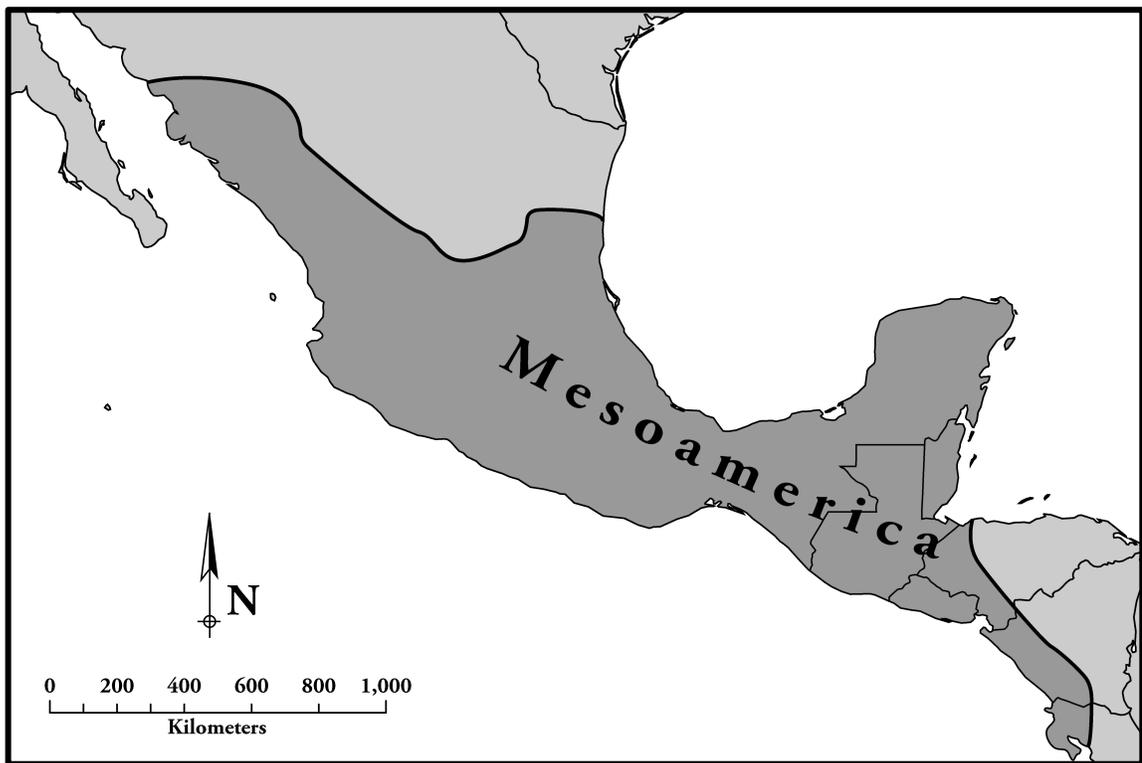


Figure 0.1. Map of Mesoamerica. Illustration by author.

contributing to a high degree of interaction between social groups within Mesoamerica (Freidel 1979).

Mesoamerica as a culture area is a modern concept that scholars have continuously developed and refined. Paul Kirchhoff (1952), drawing from both archaeological and ethnohistoric sources, originally defined Mesoamerica by noting the presence of shared economic, social, and cultural characteristics that distinguished

cultures within this region from those to the north and south. Alongside the development of new methods and theoretical approaches, scholars proposed numerous refinements to the geographic extents and characteristics of Mesoamerica (Creamer 1987). More recently, Kirchhoff's (1952) list of shared traits has been surmounted by definitions of Mesoamerica based on shared practices that arose through consistent and intensive interaction an "interconnected network of societies" in the region with otherwise disparate languages, cultural values, and religious institutions (Joyce 2004). The more modern definition of Mesoamerica highlights shared social, economic, and political practices with a tendency toward the recognition of ideological commonalities. These include similar settlement patterns throughout the region that speak to shared systems of social organization (Ashmore 1981), the existence of hereditary elite classes who concentrated economic resources, political power, and spiritual authority into the hands of relatively few individuals (e.g. Joyce 2000), the use of mutually intelligible iconography (e.g. Guernsey 2010), and a common set of assumptions regarding the shape and operation of the universe (e.g. Brady and Ashmore 1999). Mesoamerica has proven to be an enduring and functional designation.

Willey, Eckholm, and Millon (1964) operationalized the concept of Mesoamerica for archaeological research, in part by establishing a regional chronology (Adams 2005:20; Creamer 1987). Mesoamerican chronology is commonly divided into the Paleoindian, Archaic, Formative (2000 BC to AD 250) (used interchangeably with Preclassic in the Maya region), Early Classic (AD 250-600), Late Classic (AD 600 –

800), Terminal Classic (AD 800 – 950), and Postclassic (AD 900 – 1521) periods. While this chronology was initially conceived as an evolutionary schema, additional research challenged evolutionary models by revealing complex histories of social and cultural change. Nevertheless, this chronological system remains widely used (Willey 1981).

The Maya Region

One of the most intensively studied areas in Mesoamerica is that of the Maya, occupying parts of southern Mexico, Belize, Guatemala, and portions of Honduras and El Salvador. Commonly, the Maya area is conceptualized as being divided into three primary zones: the highlands, lowlands, and southern coastal plain. The lowlands, with which this dissertation is principally concerned, is further subdivided into northern, southern, and central lowland regions (Figure 1.2). The research for this project occurred within the Three Rivers Region, located within the central lowlands.

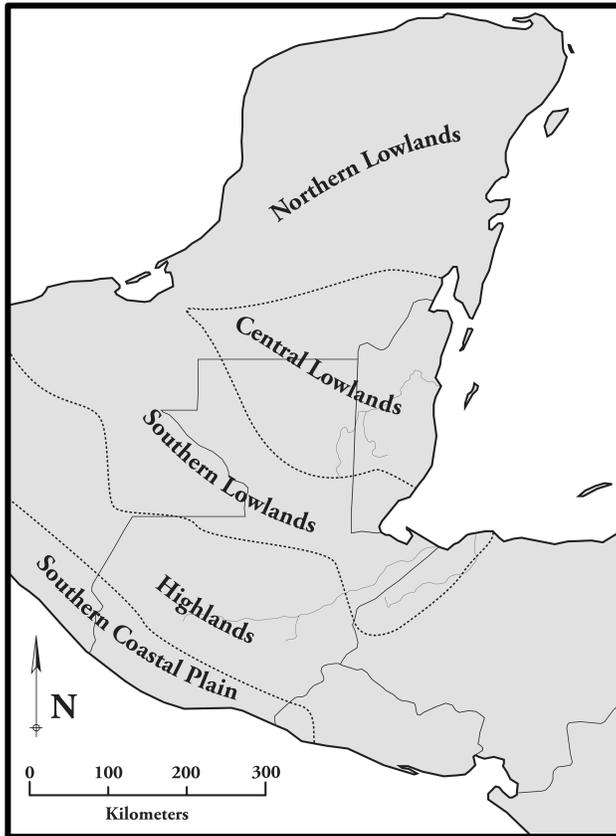


Figure 0.2. Major geographic divisions in the Maya Region. Illustration by author.

The Three Rivers Region

The Three Rivers Region is an arbitrarily defined geographic and archaeological culture area encompassing portions of Guatemala, Mexico, and Belize encompassing roughly 2,000 km² (Figure 0.3). The Three Rivers Region crosscuts national boundaries and intersects the Rio Bravo Conservation and Management area, discussed below.

Described as representative of the cultural and ecological diversity of the Maya Lowlands, this region encompasses a variety of ecological zones from the Belize Coastal Plain to the high-canopy tropical forests of northeastern Guatemala, and was densely settled by the ancient Maya (Scarborough, Valdez, & Dunning, 2003). The northern

boundary of the Three Rivers Region runs along the Rio Hondo, while the Rio Azul and Booths River demarcate the eastern and western extents. The southern border is defined by a line running east-west placed south of the ancient Maya site of Chan Chich. Many other major ancient Maya civic centers are located within the Three Rivers Region, including La Milpa, Río Azul, Dos Hombres, Kinal, Maax Na, and Blue Creek.

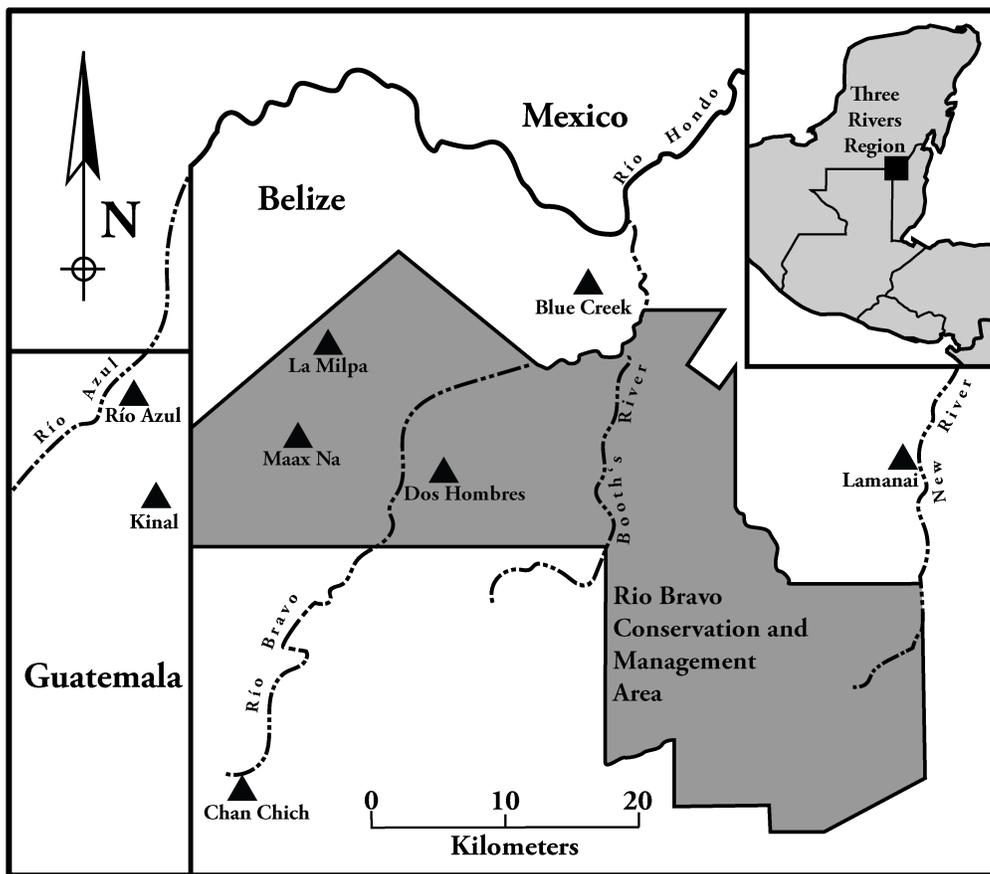


Figure 0.3. Map of major features within and adjacent to the Three Rivers Region (see inset) and the Rio Bravo Conservation and Management Area. Adapted from (Scarborough et al., 2003)

Rio Bravo Conservation and Management Area

Within the Three Rivers Region, near the borders of Guatemala and Mexico, lies the Rio Bravo Conservation and Management Area (RBCMA), a research and rainforest

reserve. Encompassing roughly 1,000 km² of protected landscape, the Rio Bravo is the largest cultural and ecological conservation area in Belize. In addition, the RBCMA adjoins the Calakmul Biosphere Reserve of Campeche, Mexico and the Maya Biosphere Reserve of Petén Guatemala, forming an uninterrupted tract of 18,000 km² of protected forestlands; the largest contiguous cluster of conservation spaces in Central America (Anonymous 2014). The RBCMA has been and continues to be subject to numerous ecological and archaeological research projects (Sagebiel 2005).

Archaeological Research in the Three Rivers Region

Archaeological research in the Three Rivers Region began in 1938, and after a hiatus, continued in the 1970s and 1980s as scholars documented sites in newly established conservation areas. These efforts culminated in the early 1990s with the emergence of three long-term archaeological projects, including the La Milpa Archaeological Project (see Hammond and Tourtellot 2004), the Maya Research Program (Guderjan 2013), and the Programme for Belize Archaeological Project (Aylesworth & Valdez, 2004).

Early research at La Milpa and the Three Rivers Region began with J. Eric Thompson, who in 1938, was the first archaeologist to document La Milpa, the largest of several urban centers in the region (Hammond 1991b). During his brief stay at La Milpa, Thompson identified 12 stelae, or standing stone monuments. Of these monuments, only one had decipherable date of 780 A.D. (Hammond 1991b). In addition, Thompson made a preliminary sketch map of the main plaza of La Milpa and attempted to locate

ceremonial deposits under stelae without success. Thompson's expedition to La Milpa was terminated after only a few days due to a lack of clean water (Hammond 1991b).

For several decades, archaeological research ceased at La Milpa and the RBCMA until Anabel Ford and Scott Fedick (1988) surveyed the area in 1988 during an assessment of the cultural resources of the region. Ford and Fedick (1988) produced a preliminary pace and compass map of La Milpa, and noted that it was a rival, in terms of the scale of its construction and settlement density, to other prominent sites in Belize, such as Caracol (see also Guderjan 1989). In 1992, two major archaeological projects commenced within the RBCMA, the La Milpa Archaeological Project, and The Programme for Belize Archaeological Project.

In 1992, Norman Hammond received permission to survey and excavate within a 6 km radius of La Milpa's site center and founded the La Milpa Archaeological Project (LMAP). Meanwhile, Richard E.W. Adams (1990, 2003), who previously worked adjacent to the RBCMA at the major ancient Maya center of Río Azul and headed the Ixcanrio Regional Project, accepted an invitation from the Belize Institute of Archaeology to conduct research in the RBCMA. Adams established the Programme for Belize Archaeological Project (PfbAP) in 1992, and Fred Valdez, Jr. assumed direction in 1994. The PfbAP is an umbrella project that provides logistical support for subprojects led by PhDs as well as research projects led by PhD and MA/MS students.

The duration and intensity of research within the Three Rivers Region and at La Milpa established a well-defined, though not uncontested, understanding of chronology,

culture history, and regional interaction, established from a diachronic analysis of changing ceramic complexes (e.g. Sagebiel 2005; Sullivan 2002; Sullivan and Sagebiel 2003) and architectural style (Hammond et al. 1998; e.g. Hammond and Tourtellot 2004). In addition, the region has had numerous studies of ancient ecology and political ecology resulting in a thorough, but again not unchallenged, comprehension of changing land use practices over time. These studies have explored the critical role of micro-environmental diversity and resource availability (e.g. Guderjan, Baker, & Lichtenstien, 2003; Scarborough & Valdez, 2003), intensive modification of the landscape for productive purposes such as wetland and terrace agriculture (e.g. Dunning et al. 2002; Fischbeck 2001), and water management practices (e.g. Scarborough, 1998; Scarborough, Becher, Baker, Harris, & Valdez Jr., 1995). Each of these projects also considered the contribution of various subsistence practices to social and political organization at La Milpa and other areas of settlement throughout the Three Rivers Region.

The large size of the reserve and inaccessibility of terrain has left much of the Pfb property unexplored, though archaeologists have conducted several substantial survey and mapping projects in the Three Rivers Region. Ford and Fedick (1988), who conducted a preliminary archaeological reconnaissance project, significantly expanded Thompson's early efforts. The La Milpa Archaeological Project (LMAP) co-director Gair Tourtellot and LMAP affiliated scholars (e.g. Hammond 1996; Tourtellot et al. 1994; Tourtellot, Clarke, and Hammond 1993) mapped La Milpa in considerable detail and conducted limited excavations throughout their permit area.

In addition, several doctoral dissertations associated with both LMAP and PfBAP involved intensive survey, mapping, and test pitting (e.g. Houk 1996; Robichaux 1995; Rose 2000). This work culminated in a unified La Milpa GIS database assembled by Francisco Estrada Belli (2003), available to the public at <http://www.bu.edu/lamilpa/>. Today, major survey and mapping efforts continue with the Dos Hombres to Grand Cacao Project led by Dr. Marisol Cortez-Rincon (2011). The foregoing is by no means an exhaustive list of the survey projects within the PfBAP or the Three Rivers Region. Small-scale and/or site-centric projects that included survey and mapping components in their research design have been omitted from this discussion, which has focused on larger projects intent on developing more comprehensive regional perspectives.

Summary of Previous Findings in the Three Rivers Region

Archaeological research in the Three Rivers Region has produced a coherent understanding of the life-history of the Three Rivers Region and its urban centers, though there are several points of contention related to the specifics of the chronology, culture history, and political economic aspects of ancient society. In the following section, I outline the key findings, organized here by chronological order.

Preclassic Occupation (2000 BC - AD 250)

Ceramic data suggests that the ancient Maya began occupying the Three Rivers Region in an identifiable fashion in the Middle Preclassic (1000-400 BC) (Dunning et al., 1999). Given the lack of year-round water supplies in many settled areas, annual drought cycles and the karstic limestone platforms that dominate the Maya Lowlands, securing

subsistence resources was likely an immediate and enduring concern. While undoubtedly prominent concerns, however, ecological factors were never entirely determinative of ancient Maya lives. Even in the Preclassic period, there is evidence that the residents of La Milpa and elsewhere modified their environment to better suit their needs through clearing forests to create fields. By the Late Preclassic (400 BC to AD 250), the Three Rivers Region was enjoying a demographic florescence, with an increasingly large population concentrated around areas where water was plentiful year-round through both naturally occurring and human produced sources (Dunning et al., 1999; Sullivan, 2002). During the Late Preclassic, the Three Rivers Region maintained strong connections to Tikal, a major Classic period Maya center in the Petén district of Guatemala, as demonstrated by participation in the long-distance exchange of material goods and ideational concepts (Reese-Taylor & Walker, 2002).

Early Classic (AD 250 – 600)

Ceramic data indicate that in the Early Classic, urbanized centers entered a period of slight demographic decline. In this time period, it appears that many people migrated away from urban centers and into intermediary areas (Sullivan, 2002). Nevertheless, construction continued on a scale that was unprecedented for the region, and interregional connections continued to be important. During this time, Rio Azul, La Milpa, Blue Creek, and other sites not only built on an increasingly monumental scale, but also adopted ceramic styles (Sullivan, 2002) and architectural elements (Reese-Taylor & Walker, 2002) that pointed to connections to distant places through stylistic emulation. It is during

the Early Classic that the first known stelae are dedicated at La Milpa, suggesting that Petén styles of governance and social relations were beginning to take hold in this region (Beach, Luzzadder-Beach, Dunning, Hageman, & Lohse, 2002; Hammond et al., 1998).

Late Classic (AD 600 – 800)

During the early Late Classic, ceramic data suggest that the Three Rivers Region became more isolated from the Petén (Beach et al., 2002; Sullivan, 2002), which might be connected to the decline of Tikal and the coterminous rise of Calakmul (see Martin & Grube, 2000, pp. 39-40). Transformations in the interregional balance of power were met with a new localization of political authority within major centers of the Three Rivers Region. While Rio Azul was sacked and abandoned near the end of the Early Classic, just prior to the decline of Tikal in the mid sixth century, La Milpa would become a significant regional power by the Late Classic (Figure 1.4).

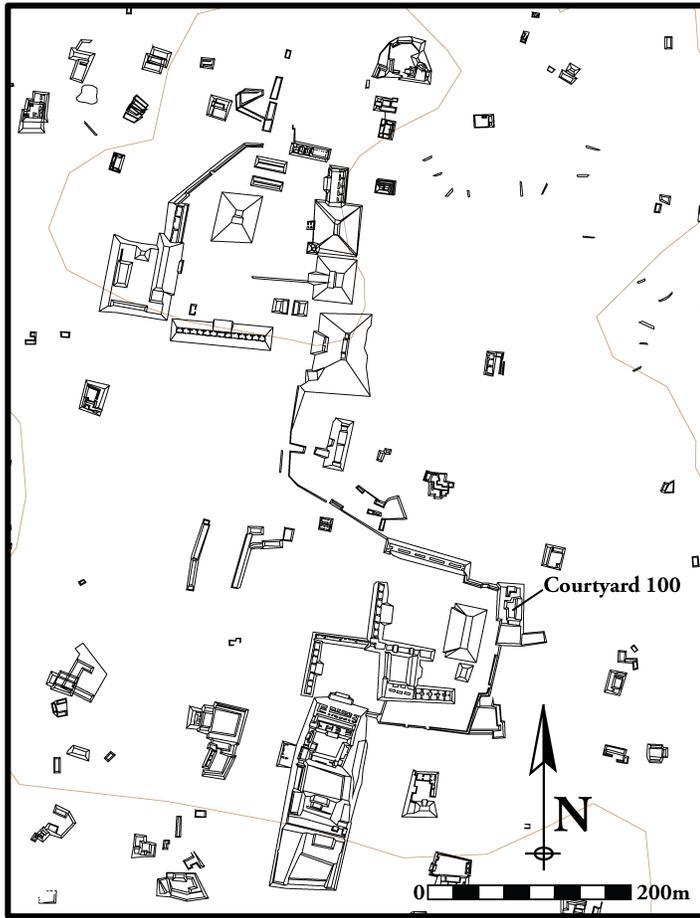


Figure 0.4. La Milpa site plan. Adapted from GIS data compiled by Francisco Estrada-Belli, available to the public at bu.edu/lamilpa.

In the absence of reliable epigraphic records for the region, Brett Houk (2003) contends that La Milpa's regional power can be detected in the alteration of civic patterns at Dos Hombres. Houk (2003) argues that Dos Hombres may have been remade in the image of La Milpa. He also suggests that these transformations may have occurred either through mimicry of architectural forms by local elite or through direct control of new construction at Dos Hombres by elite rulers from La Milpa. While these two alternatives may not exhaust the field of possibilities for the civic plan of either site, both alternatives

proposed by Houk (2003) suggest emergent localized power structures. The appearance of new ceramic forms and styles that are locally produced reinforces the preceding inference (Sullivan, 2002; Sullivan & Sagebiel, 2003).

During the later parts of the Late Classic, some of the most ambitious construction programs occur at La Milpa's central precinct, elaborating the core of the site (Hammond & Tourtellot, 2004). Hammond and Tourtellot (2004) argue that these programs represented a new era of construction that emphasized larger, yet less labor-intensive construction projects. That is, the new structures and renovations made use of loosely packed chert and limestone fill, which was a departure from the Early Classic utilization of a more solid fill composed largely of cut blocks (Hammond & Tourtellot, 2004).

Terminal Classic (AD 800 – 950)

The Terminal Classic was most likely a period of slow decline for La Milpa. Hammond and colleagues (Hammond et al. 1998; Hammond and Tourtellot 2004) argue that several construction projects at the site's core were never completed and were abandoned in a partially completed state, findings that point to the declining power of royal authority toward the end of the Late Classic period (Houk 2015:177). Given the lack of evidence for prolonged violence, such as fortifications and/or evidence of widespread burning, or warfare events in this region near the end of the Late Classic, it appears that the abandonment at La Milpa was likely connected to larger regional sociopolitical reorganizations and political ecological failures without direct involvement in violent conflicts that occurred elsewhere (Hammond and Tourtellot 2004).

Postclassic (AD 900 – 1521)

By the 10th century, in the Early Postclassic period, only a small population remained at La Milpa's center. Archaeological evidence for Postclassic occupation is limited however, as ancient Maya people often cleared rooms of belongings and debris prior to abandonment. Therefore excavations within these spaces do not generally provide significant evidence of their final occupation (Houk 2015). Zaro and Houk (2012) offer evidence of occupation and construction within and adjacent to La Milpa Courtyard 100, where evidence suggests a brief period of occupation in the tenth century AD. After abandonment, visitation continued throughout the Postclassic, as visitors to sites within the region deposited ceramic objects and other artifacts near standing stone monuments, or stelae, and monumental structures (Hammond & Bobo, 1994), and continued to add artifacts including figurine fragments, ceramic vessels and human remains to a presently enigmatic deposit along the eastern wall of courtyard 100 (Houk 2015:178; Zaro and Houk 2012).

In the Terminal Classic, the Three Rivers Region reached new levels of population density prior to its rapid depopulation and abandonment during the Classic Maya collapse. Population density in this region is estimated to have ranged between 480 and 800 persons per square kilometer in urban zones (Robichaux 1995) and 180 persons per square kilometer in intermediary and peripheral zones (Hammond 1996). Given these figures, it is possible that between 50,000 to 85,000 resided in the immediate vicinity of La Milpa (Cf. Hammond 1996; Robichaux 1995; Rose 2000:80–83). Population

estimates of this kind are somewhat speculative however, as the methodology employed to determine population density is based on several assumptions regarding the coeval occupation of structures and the number of individuals assumed to inhabit each one (Rice and Culbert 1990). Nevertheless, these estimates may offer some general idea of the density of settlement of the landscape and the productive capacity required to support such a community.

Although the debate as to whether new modes of interaction with the environment for the purposes of production preceded the rise in population or if increases in population were the result of new modes of production (cf. Childe 2004; Flannery 1972) will likely remain unresolved, what is clear from the archaeological record is that the Maya of the Classic period utilized virtually all microenvironments to meet subsistence and surplus demands. During the latter portions of this period, there are many indications of an intensification of productive relations with the landscape; including the modification of low-lying seasonally flooded swamps or *bajos*, the construction of terraces, and the creation of reservoirs, small depressions known as *aguadas*, check dams, and other water management features, to supply this resource on a more permanent basis (Beach et al. 2002; Dunning et al. 1999, 2002; Fischbeck 2001; Scarborough 1998; Scarborough et al. 1995).

Structure of the Dissertation

Through the construction of a biography of place, the Xaman Witz Archaeological Project aims to explore the relationships between ancient Maya systems

of belief, including cosmological and political-ideological principles, and the social landscape of La Milpa North. The remainder of the dissertation is loosely divided into two sections. In section one (Chapters 1-3), having outlined the specific region and the long history of research, I discuss the theories and methodologies used by this project. In the second section (Chapters 4-8), I discuss the specific findings and interpretations generated through archaeological research at La Milpa North.

Chapter Two elucidates the theoretical frameworks employed over the course of this project. It first features a discussion of cosmology, by defining the term and demonstrating its importance to anthropological research. Then this chapter delves into broad survey of Mesoamerican cosmological ideation, highlighting continuities from some of the earliest cultures in the region to the present day while reviewing sources from which this information is derived. Subsequently, this chapter turns to a discussion of biographies of place, the overall investigative and interpretive framework of this research. As a biography of place is principally concerned with issues of cognition, meaning, and social memory, this chapter then explores a set of theoretical approaches that have previously been used to access a few of the more ephemeral aspects of ancient social relations. These include Practice Theory, Political and Ritual Economy Theory, and finally, a diverse set of landscape approaches, from settlement pattern analysis to phenomenology grounded in digital reconstructions of ancient landscapes.

The third chapter of this dissertation reviews the field and laboratory methods used in this project. This chapter details the archaeological survey methods used in this

project, including structure mapping, aerial photography, digital elevation mapping, and the construction of the Geographic Information System (GIS) for the project. In addition, it details the excavation methods used, which were dependent on various archaeological contexts. Next, chapter three documents the laboratory analysis methods conducted by myself as well as experts in the fields of ceramic analysis, obsidian analysis, lithic analysis, and portable x-ray fluorescence (pXRF). Finally, Chapter Three discusses photogrammetric methods and three-dimensional modeling tools used to create digital reconstructions of La Milpa North utilized in phenomenological analyses.

Chapter Four begins the second section of the dissertation, which focuses on specific insights into the lives of the inhabitants of La Milpa North, and engages with facets of cosmology, political ideology, political economics, and social landscape practices within Classic Period Maya society. Chapter Four offers a summary of the culture-history of La Milpa North as reconstructed through archaeological survey, surface collection, and excavation. This chapter outlines the construction history and chronology of the site core and its adjacent areas and asserts that the core architectural group of La Milpa North functioned as a palace. Together, these efforts demonstrate that while Early Classic activities occurred at the site at an unknown scale and intensity, the largest expansion of both the palace group and surrounding community occurred relatively late in the occupation history of La Milpa, during the Late to Terminal Classic. This chapter situates La Milpa North into the relatively well-established regional chronology and culture history of the Three Rivers Region.

Chapter Five explores the La Milpa Cosmogram hypothesis (Tourtellot et al. 2000, e.g. 2003), detailing the particulars of the research and subsequent controversies (e.g. Smith 2003) that was the initial impetus for this research program. Then it re-evaluates the cosmogram hypothesis using new evidence generated by this project and new interpretations of previous findings based on analogous examples of polity-wide cosmological expressions at Copán (Maca 2002, 2006) and elsewhere. This chapter tentatively validates the cosmogram hypothesis and argues for the existence of a polity-defining set of boundary markers placed in accordance to cosmological principles, in the form of uncarved stelae placed to the four world directions. In addition, this chapter explores the possibility of multiple, nested cosmograms at La Milpa, one with very close parallels to the Copán example and used primarily for ritual purposes, which may not have included La Milpa North, and another for political use, of which La Milpa North is a defining component. Finally, this chapter discusses the possibility of a causeway, of both ritual and quotidian value, that may have connected La Milpa Center to La Milpa North before continuing on to a possible hinterland ballcourt and the agriculturally-oriented ceremonial center of Tzak Naab (Kotsoglou and Heller, n.d.), connecting La Milpa and its satellite secondary centers to other sites that incorporate ritually-prescribed movements into cosmographic site plans (e.g. Keller 2006).

With the possibility of cosmological ideation as a prime motivator in the decision to place La Milpa North in its position on the social landscape tentatively established, Chapter Six examines practices of production at this location. This chapter presents

evidence for lithic production that occurred on the western edge of the palatial compound, explores issues related to palace provisioning, discusses elite surveillance over agricultural spaces vital to the La Milpa polity, and examines and interprets evidence of elite craft production occurring within a high-status household of the palace core. Together, these data produce a sense of socio-economic class difference at the site and demonstrate interconnection between the daily activities of elite palace residents and the economic activities of lower-status residents of the community in which La Milpa North is embedded. Drawing on inferences constructed from practice theory and political/ritual economics, this chapter explores the nature of social difference between elites and non-elites through the lens of the economic and social reproduction of an elite household located within the palace compound.

Building upon the previous chapter, Chapter Seven puts forth the hypothesis that La Milpa North served as a node of political authority within the La Milpa polity as the household and palatial compound of a lineage of non-royal, titled elites. Alongside an analysis of the material and architectonic assemblage of La Milpa North, this chapter explores experiential aspects of architectural elements that would have been familiar to the ancient Maya who interacted with this place. I argue that the architects of the palace employed a specific architectural syntax designed to convey social difference and attend to the needs of its elite residents. The household plans of La Milpa North created a comfortable, practical, and defensible space, on a monumental scale, that was suitable not only for habitation, but also political and ritual activities, some of which had

performative aspects. By establishing a comparative framework that identifies parallels between this site and households of important non-royal political and military leaders, which are likewise placed at cosmologically significant positions on the landscape (e.g. Ashmore 1991; Maca 2006; Tsukamoto et al. 2015), I argue that La Milpa North was occupied by a privileged lineage of non-royal, titled elites.

Finally, chapter eight presents the conclusions derived from this research. This chapter explores the relationships between cosmological ideation and political, economic, social, and ritual life, and how those relations become encoded in archaeological landscapes. This chapter also comments on the use of a biography of place approach as a core component of the research design of this project given its limited scope and resources.

Chapter 2: Theory

Rather than search for specific material correlates to evaluate the La Milpa cosmogram hypothesis, the Xaman Witz Archaeological Project adopts a biography of place approach in its exploration of La Milpa North (see Chapter 1). A biography of place is a single narrative, of many possible narratives, that explore the production, use, and reproduction of social landscapes over its history of occupation, from inception to afterlife from the perspective of changes in the material record. Biographies of place recognize that landscapes are always in-processes of becoming; the result of accumulated interactions between social processes and material conditions (Ashmore 2002a; see also Pred 1984). The creation, maintenance, modification, and abandonment of places are understood as meaningful symbolic acts (Ashmore 2007). Biographies of place are multilocal, multivocal and multitemporal. They investigate the dynamic processes by which meanings and memories are ascribed to landscapes by multiple social groups. Differentiated by social status, life experiences, and the contingencies of history, people attributed dissimilar or contradictory meanings to the same place or landscape (Ashmore 2009). Given their breadth and scope, biographies of place cannot be approached through the lens of single a theoretical paradigm or method. Rather, multiple approaches are applied to a single place in an iterative and integrative dialogue that endeavors to elucidate human ideation within processes of social change (Ashmore 2002a).

The remainder of this chapter briefly outlines the theoretical perspectives that this project adopts in its construction of a biography of place. First, I discuss the significance of cosmology, culturally shared ideas about the form, function, and origin of the universe that provide context for all other forms of ideation and experience. I then discuss the specifics of ancient Maya cosmology and summarize myriad sources from which this information is derived. Subsequently, I briefly outline the theoretical perspectives that provide powerful interpretive mechanisms for this biography of place. These include practice theory, political and ritual economic theories, and social landscape approaches, a set of interrelated viewpoints that are united by the common themes of production and reproduction, which are inherently diachronic processes. When bolstered by the social contexts established by other researchers, these bodies of theory offer limited access to the experiences of ancient actors and provide glimpses into the meanings and memories they assigned to their landscapes.

The Significance of Cosmology

Cosmologies are systems of beliefs regarding the shape, operation, and origin of the universe. Cosmologies are culturally constructed cognitive models that position an individual and society within all of existence. As such, they concern the origins and structure of the universe, and contain explanations that concern the past, present, and future of a society (Reichel 2005). Because cosmologies are social constructs they are products of and subject to historical and social contexts. Therefore, they are not static entities, and are influenced and transformed by other social forces (Reichel 2005).

Because cosmological beliefs concern the operation of the physical universe, they become basic frameworks from which all material things and social relations are grounded, contextualized, and ascribed meaning (Abramson and Holbraad 2012). The study of cosmology is therefore the study of foundational cultural assumptions.

The above definition of cosmology moves beyond the common and dominant western meaning of the term, which is the study of an objective universe that exists independent from human thought and action. This scientific view of the universe is predicated on a separation of humanity from the cosmos intrinsic to modern western thought but largely absent in ancient and non-western worldviews (Redfield 1952).

Despite significance differences between conceptualizations of ancient, modern, western, and non-western cosmologies, there is a point of commonality: cosmologies are formed in relation to empirical observations of the physical world and the cosmos, which are mediated through culturally informed ontological frameworks. Likewise, cosmographies, or representations of the cosmos through art, speech, or metaphor, are also arbitrated through their various ontological systems.

A prominent form of cosmography is the cosmogram. A cosmogram is a representation of cosmological beliefs rendered in a geometric form and may be expressed through any media and at scales large and small. While there is a not necessarily literal or determinative connection between cosmograms and the cosmologies they signify, cosmograms embody aspects of the shape, operation, and origin of the universe and may contain references to physical or ideational spaces and landscapes.

Cosmograms can be completely contained within a single object or constructed from multiple objects; such representations need not be complex or formalized, though they often are. Some modern Mesoamericans represent the four-sided horizon and three-vertical tiers of their universe with little more than a table, foliage, some otherwise mundane objects (Russell 2016). Despite simplistic construction, such an arrangement effectively reflects and reproduces the shape of the Mesoamerican cosmos. Other cosmograms may be highly formalized products intertwined with social relations and power. For instance, some ancient Roman (Rykwert 1976) and Chinese (Wheatley 1971) settlements were built in accordance with and as representations of principles of cosmic order.

The study of ancient cosmology, even within a single society, is difficult as cosmologies are complex social constructs that must always be understood from an etic viewpoint. For instance, cosmologies may not be universal within a society. There may be significant differences in conceptualizations of the universe based on variables including social class, age cohorts, occupations, or other sources of social difference within any given society (Reichel 2005). In addition, efforts to understand cosmologies other than one's own, are complicated by the fact that developing emic understandings of cosmological ideations from another culture is, on some level, impossible. Conceptions of cosmologies that are foreign to the researcher are by necessity, subject to, and situated within that of the observer. This presents a situation in which an observer is bound to understand cosmologies alternative to their own as inherently false, no matter the degree

relativism they employ as they approach their subject (Abramson and Holbraad 2012). Many scholars have described the great diversity of means to explain the origin and order of the universe in terms of underlying universal structures of the mind, historical contingency, social relations as enacted through practice, or by some other mechanism. The observer however, can only situate those who believe in these other ‘false’ cosmologies within their own universe, creating distance between researcher and subject (Abramson and Holbraad 2012).

Despite the many potential pitfalls inherent in working with unfamiliar cosmologies, efforts to understand this facet of culture and cognition in other societies, both ancient and contemporary, are essential. Because cosmologies provide frameworks for interpreting the world, they are therefore foundational to the production and reproduction of worldviews. Archaeologies of cognition and meaning should, “concentrate on the interpretation of ancient and non-Western societies through the medium of their cosmologies and worldviews” (Iwaniszewski 2009). This perspective offers the potential to understand meanings encoded in the archaeological record that are not otherwise accessible, by providing a foundational context for inferences regarding ancient cognition and processes of meaning-making.

Mesoamerican Cosmology

Mesoamerican cosmology, while subject to regional and temporal variations as well as multiple simultaneous metaphoric representations (see Taube 1988), is predominantly founded upon a belief in a four-sided and three-tiered universe. The four

sides of the terrestrial plane, which is often represented as a crocodile floating on a primordial sea (Taube 1988, 1989), roughly correspond to the four cardinal directions. In this universe, east and west are reckoned by the movement of the rising and setting sun across the horizon between solstice points over the course of a year (Hanks 1990; Vogt 1985; Watanabe 1983). The northern and southern directions are ambiguously defined as spaces between the well-delineated eastern and western horizons. North and south are closely associated with verticality, with north conceptually representing upwards and south denoting downwards along a vertical axis. Each world direction has an associated color. Through the use of celestial bodies to define space, namely the diurnal and annual movements of the sun, Mesoamerican cosmology integrates notions of space and time, producing a model of the universe in which the two are inseparable (Hanks 1990; Watanabe 1983).

The diurnal path of the sun integrates the two additional planes of existence that, in the Mesoamerican worldview, exist above and below the terrestrial realm. Above the terrestrial plane is a celestial upperworld, through which the sun travels as it approaches and descends from its zenith point toward sunset in the west. The celestial realm is comprised of thirteen layers, and is often conceived as a dwelling place of certain deities and important deceased ancestors (Taube 2004). Located vertically below the terrestrial plane is an underworld, passed through by the nighttime sun as it travels to nadir before returning to sunrise in the east. Consisting of nine levels, the underworld is an inverse

reflection of the terrestrial world, often conceived of as a watery place and the home of malevolent deities of disorder, filth, and disease (Holland 1964).

The three tiers of existence, in Mesoamerican cosmology, constitute an animate and interconnected universe (Reilly 1995:33). A conduit between world tiers is established by the *axis mundi*, a central place within the cosmos whereby connection and travel between the underworld, earth, and sky becomes possible. *Axis mundi* take many symbolic forms. These include certain prominent mountains, maize (Reilly 1995:33), penetrations into the earth, such as caves or cenotes (Brady and Ashmore 1999), quatrefoil portals (Guernsey 2010), or a world tree. The world tree, a common form of cosmography in Mesoamerica, has roots that penetrate the layers of the underworld, a trunk that grows from the earthly middle world, and branches that extend into the celestial realm. Often, representations of the world tree take the form of a Cieba tree (e.g. Gillespie 2000a) or an upright crocodilian creature with tree-like attributes (e.g. Taube 2004). Surrounding the world tree are four sky-bearers, known as God N, deities whose divine responsibility is to support and uphold the layers of the universe. In addition to God N, many other deities have quadripartite aspects associated with the four world directions, including the Maya rain god Chaak and other water-related deities (Schaafsma and Taube 2006).

The recognition of four cardinal points and center fashions a schema of the universe consisting of a five-part cruciform shape with a central point surrounded by four additional points. This shorthand representation of the shape of the terrestrial realm is

often repeated in Mesoamerican art, iconography, and spatial patterns (e.g. Mathews and Garber 2004). For peoples of this region, *axis mundi* may be recreated virtually anywhere through ritual activities, such as the placement of objects in cosmologically significant patterns, through monumental architecture, or ritual activities public and private.

Ancient Mesoamerican cosmologies are relatively well understood as the result of constructing models from a variety of sources. These include ethnographic and linguistic studies of modern Maya communities, ethnohistoric texts, ancient epigraphic and iconographic depictions of the shape and function of the universe, and material manifestations of cosmological expression identified in the archaeological record. While an exhaustive survey of these sources is beyond the scope of this dissertation, this brief exploration of the topic is intended to demonstrate the great diversity of materials that contribute to our contemporary understanding of ancient Mesoamerican cosmological conceptions.

Ethnographic studies of contemporary Maya communities document cosmological ideations of modern peoples as a means to understand the practices households and communities in both ancient and modern contexts (e.g. Gossen 1974; Vogt 1993). Meanwhile, linguistic studies of modern populations reveal cosmological ideation encoded in language (e.g. Hanks 1990; Watanabe 1983). For instance, Vogt's (1993) ethnographic work among the Tzotzil of Chiapas, Mexico, established similarities between the practices of modern Maya communities and archaeologically observed phenomena, including relations to sacred landscapes, settlement configurations, and

cosmology, though he cautions applying these observations uncritically to the archaeological record given the dynamic nature of cultures, the passage of time, and the localized nature of ideologies and practices (Vogt 1964). Brown's (2004) ethnoarchaeological study of mountaintop shrines used by contemporary K'iche' speakers in Highland Guatemala elucidates ritualized behaviors that have strong correlates in ancient contexts. Brown (2004) demonstrates the centrality of largely unbuilt spaces on Maya sacred landscapes and provides a template from which these forms of cosmological ideation may be located in archaeological contexts. Taking a cognitive linguistic approach, Watanabe (1983) finds that spatial references among Mam speakers, a Maya linguistic community in Santiago Chimaltenango, Guatemala, elucidate the interrelations between observable environmental phenomena, space, time, and the movements of celestial bodies that are the basis of both modern and ancient Maya cosmologies. Despite the potential for disjunction, or the transformation in meanings attributed to similar forms over time (see Kubler 1961), ethnographic work among modern Mesoamerican communities has substantial explanatory power when applied to patterns observed in the archaeological record.

Inferences from research among modern communities may be reinforced and projected deeper into time through ethnohistoric documents. Many important ethnohistoric texts were authored by colonial authorities, who developed detailed understandings of indigenous beliefs as a means for their eventual eradication. Salient examples of these sources include 16th century texts authored by Fray Diego de Landa

(Tozzer 1941) and Fray Bernardino de Sahagún (Sahagún 1950). These texts provide descriptions of practices, both ritual and quotidian, that offer important clues regarding the cosmologies of Mesoamerican communities during the Colonial era. For instance, using ethnohistoric documentation of Uayeb rituals, drawn largely from Landa's accounts, Coe (1965) demonstrates that a quadripartite division of space is present in prehispanic and colonial era Maya civic plans. Coe (1965) finds that each quarter was associated with a cardinal direction and an associated color, which replicated the shape of the universe within the bounds of the community. In addition, court documents from idolatry trials present detailed descriptions of ritual practices and Mesoamerican worldviews that may be used to aid modern reconstructions of past ideologies (Chuchiak 2002). Though often brutal means were used to extract much of this information, it is nevertheless an invaluable source (see Tedlock 1993).

Other sources of information pertaining to cosmological ideation include texts written by indigenous authors in the colonial era. Unlike Spanish colonial documents, these writings present more emic views into the creation, ordering, shape, and function of the Mesoamerican universe, though not without a degree of European influence. These texts include the *Popol Vuh*, the Maya book of creation written in the Highlands of Guatemala in the early 18th century (Tedlock 1996), and the nine remaining books of *Chilam Balam* that were compiled in the Yucatan in 17th and 18th centuries that detail the prophecies of a 15th century soothsayer alongside accounts of cosmogenesis and ritual practice (Roys 1967). These texts provide insights into Mesoamerican cosmology, though

they are, like all written sources, subject to the agendas and standpoints of their authors. Nevertheless, ethnohistoric sources offer invaluable means to identify and reconstruct cosmological ideation in archaeological contexts.

Precolonial cosmographic representations are also present in screenfold books, known as codices. For instance, the first page of Codex Fejérváry-Mayer, from Late Postclassic highland Mexico, illustrates the creation of space and time. In this image, Xiuhtecuhtli, the god of fire and time, marks center while dismembering Tezcatlipoca, the god of earthly phenomena and disorder, and casting his body to the four world directions. Eight cosmic trees and birds are present in the scene, marking cardinal and inter-cardinal points. Four sets of five day names are placed at the four sides of the world in a counter-clockwise progression, and each direction is illuminated by its associated directional color (Seler, 1901-1902; Taube, 2012). An analogous example from the Maya region may be found in pages 72-73 in the Madrid Codex, which contains a scene with a comparable structure, indicating a Postclassic pan-Mesoamerican system of cosmological beliefs based upon a quadripartite world and the integration of space and time (Bricker 2010).

In the Classic period, Maya hieroglyphic writing was predominately concerned with the lineages, deeds, and ritual accomplishments of its elite classes, who represented themselves as occupying a privileged cosmological position. For instance, Freidel and Schele argue that painted glyphs on the walls of Tomb 12 at Río Azul evince cosmological ideation:

“the walls of the tomb (Graham 1986:456) are oriented to the cardinal directions and display the directional glyphs for east, north, and south. In this case, of course, the quincunx pattern was completed by the interred individual, whose skeleton was destroyed by looters. Four other glyphs were placed in the corners of the tombs at the intercardinal points. Each directional glyph was paired with another sign placed immediately above it. In each, the sign is constant, but each has a superfix consisting of a variable sign and the sign variables change with the direction: k'in with east, akbal with west, the moon with north, and lamat (Venus) with south.” (1988)

Creating an *axis mundi* with the physical body of the deceased ruler establishes and reproduces the prominent central position of rulers within the cosmos (Schele and Miller 1986:72). Furthermore, scholars have argued that epigraphic texts on Classic period monuments may demonstrate that the Maya conceived of a multi-polity political world order based on a cosmological model. Stela A, a freestanding stone monument, at Copán, Honduras, portrays the ruler Uaxaklajuun Ub'aah K'awiil, dressed as the sun god at zenith. Inscriptions on this monument reference the integration of the Maya quadripartite and multilayered world through a series of cardinal directional references associated with ritual activities (Newsome 2001a:179). Based on emblem glyphs present on Copán Stela A, Marcus (1973) argues that this monument is demonstrative of a pan-Maya system of political organization founded on the cosmological principle of a quadripartite division of terrestrial space. In Marcus' (1973) model, the major centers of Copán, Calakmul, Tikal, and Palenque served as four regional capitals that supported and ordered the Classic Maya world much in the same way as the four world bearers support the sky. While Marcus' argument is controversial and contested (e.g. Hammond 1974), Copán Stela A certainly exhibits interrelation of cosmological beliefs and political ideologies in Classic period Mesoamerica.

Beyond written sources, Mesoamerican cosmological ideation is recognized as encoded within archaeological materials. Representations of the cosmos occur on multiple scales and in various media throughout Mesoamerica (Mathews and Garber 2004). Some of the earliest known indications of cosmological ideation occur among the Formative era Olmec of the Gulf Coast of Mexico. Several of the Río Pesquero celts, polished greenstone axes, depict the central figure of the Maize god surrounded by four directional ears of corn. Cosmograms were often created by ancient Mesoamerican peoples through caching activities, or the ritualized placement of one or more objects in culturally significant arrangements or special locations (Coe 1959). This practice begins with the Formative period Olmec, who with some regularity, ritually deposited celts in cosmologically significant patterns (e.g. Drucker, Heizer, and Squier 1959:185). This practice continued throughout ancient Mesoamerica in both household and public contexts. For instance, at Chan Nòohol, Belize, Robin (2002) identified a cache consisting of three river cobbles and a broken greenstone axe fragment placed behind a domestic household structure. The color and placement of the river cobbles correspond to the colors and geometry of the four world directions, while the greenstone ax marked center. In a similar vein, elites at Caracol, Belize, use layers of mercury, jadeite, malachite, coral and shells at the bottom of caches to represent the underworld, groupings of four artifacts arranged around a central object to reflect present world, and beehive fragments or depictions of a winged Itzamna, an elderly god of creation, located in the upper portions of a cache to denote the upperworld (Chase and Chase 1998). These

examples, a small sample of many such instances, demonstrate a concern, across all social classes, with the continual re-centering of a world brought into order through human effort and activity (Taube 2003).

In addition to shaping material aspects of ritual activity, the Maya often fashioned domestic, productive, and ritual spaces according to cosmological charters. Noting strong parallels between households documented ethnographically and those of the archaeological record, Gillespie (2000a) argues that the houses of common peoples conformed to a cosmographic design. These houses were constructed as four-sided buildings by placing often with four poles that supported a thatched roof around a central hearth. The four-sides of the house embodied the four quarters of the world while the hearth marked center and acted as *axis mundi*. In this way, a common house replicated the shape of a broader ordered universe (Gillespie 2000a; Taube 1998:432). Similarly, ancient and contemporary Maya create maize fields according to a protocol that mirrors the process of world creation (Gillespie 2000a; see Tedlock 1996). Finally, household shrines, which were replications of the houses of the living constructed for the inhabitation of spiritual forces, were constructed according to a design based on a quadripartite cosmos. Alongside houses and fields, these shrines demonstrate the requirement for ritual action in accordance with cosmological frameworks to create and activate spaces suitable for human activity (Gillespie 2000a).

On a grander scale, Mesoamerican architects encoded cosmological ideation into monumental architecture. For instance, radial pyramids, which are stepped four-sided

pyramids with a staircase running down each face, encode both the shape of a four-sided world as well as calendrical numerologies (Cohodas 1980). A principle example of a radial pyramid of this type is the Castillo at Chichén Itzá, a Late Classic to Postclassic Maya center in Yucatan, Mexico. Consisting of 18 terrace platforms, one for each month in the Mesoamerican solar calendar, and four staircases with 91 steps each, and a single step in front of a temple superstructure, totaling 365 steps, this pyramid is an architectural representation of the Maya solar calendar (Milbrath 1988). In addition, its cardinal orientation and four sides reflects the shape of the terrestrial realm. The Castillo was engineered to visually interact with the sun during summer solstice and the beginning of agricultural cycles (Šprajc and Nava 2013). In addition, Coggins (1980) notes that Late Preclassic twin pyramid groups at Tikal, a regional center in Petén, Guatemala, used primarily for ceremonies commemorating the end of 20 year *Katun* periods, reflect cosmological conceptions. These pyramid plaza groups embody the four world directions, including a vertical zenith-nadir axis laid horizontally along a north-south alignment (Coggins 1980). The platforms support four structures arranged in a quadripartite pattern; two radial pyramids were placed on the east and west sides of the platform and vaulted buildings to the north and south. The structures, stelae and archaeological assemblages of these groups indicate that the northern quadrant was associated with an upperworld inhabited by apotheosized royal ancestors, the east and west pyramids represented the daily journey of the sun, and to the south, a structure with nine doorways, one for each lord of the night, embodied the underworld (Ashmore 1989;

Coggins 1980). Ancient Mesoamerican elites, who could garner and direct resources on a sufficient scale, built public architecture to emphasize the shape and function of the universe, while espousing their own privileged position within the cosmos.

At a larger scale, Mesoamerican elites used site planning, or the deliberate manipulation of space in accordance to a culturally-derived spatial syntax, to express cosmological ideologies. One of the most impressive examples of central planning per a cosmological template may be found at Teotihuacán. Located in highland Mexico, Teotihuacán was a massive urban center that played a prominent role in the political history of both highland Mexico and the Maya region from the Late Formative through the Early Classic periods. Featuring a grid pattern of residential compounds and ceremonial architecture arranged along a wide avenue with a strong north-south axis, the site plan of Teotihuacán's evinces a degree of central planning unusual in Mesoamerican urban traditions. This suggests a unified vision for the site in operation from its earliest construction beginning in the Tzacualli phase (ca. A.D. 1-150) and continuing through the Xolalpan phase (A.D. 450-650) (Sugiyama 1993). The north-south running avenue of the site reflects cosmological vertical axiality and emphasizes a spatial connection between the ceremonial district in the north and the residential and administrative segments in the south. A large depression constructed at the center of the avenue could be filled with water drawn from the channelized Río San Juan and divides the northern and southern segments of the site (Sugiyama 1993). Ceremonial architecture, including the Sun and Moon temple pyramids are precisely aligned to emphasize the surrounding

sacred landscape and create astronomical alignments that mark agricultural cycles (Šprajc 2000). The iconography of sculptural elements the Ciudadela, the most likely seat of political authority, evokes the primordial sea of a pre-creation earth, from which mythological serpents bring forth the offices of warfare and rulership (Taube 1992). Time is represented using calendrical patterns of architectural and sculptural elements, and possibly by sacrificial interments beneath the temple itself (Coggins 1996; Sugiyama 1993). Ruling elites at exercised their power to construct Teotihuacán as a reflection of the cosmos while accentuating the articulations between the structure of the universe, mythological forces of creation, and themselves.

In the Maya region, settlement patterns are generally based on an arrangement of groups of common architectural forms that appear, to western eyes, to be more haphazardly placed upon the landscape. Nevertheless, cosmological principles have increasingly been located within the complex and varied site plans of major Maya civic centers as one factor, among many, which structure site plans (Ashmore and Sabloff 2002, 2003). Drawing upon the work of Coggins (1967, 1980), Guillemin (1968) and others, Ashmore tentatively identifies five elements common to many ancient Maya civic centers that may relate to cosmological ideation:

“a strongly marked north south axis; mutually complementary functional dualism for construction and spaces at north and south ends of the axis, in which the north stands for the celestial supernatural sphere, and the south, for the Underworld or the worldly; the appendage of subsidiary eastern and western units to form a triangle with the north; the common but not invariant presence of a ball court as mediator between north and south; and the frequent use of causeways to underscore the linkage between various elements, and thereby stress the symbolic coherence of the whole.” (1989)

This general pattern, though subject to numerous variations, as may be expected in urban centers with long histories of construction, modification, and use, maps well onto Maya centers such as Tikal (Ashmore 1989; Guillemin 1968), Copán (Ashmore 1991), and others, while a variant of related set of site planning principles may have been in operation at Calakmul and Xunantunich (Ashmore 1998; see also Keller 2006). In addition, cosmological site planning principles have been inferred at major and minor regional centers within the Three Rivers Region, such as La Milpa, Dos Hombres, and Kinal (Houk 2003). The prevalence of cosmological principles encoded into architectural arraignments and site plans demonstrates that, when possible, ancient Maya elites of the Preclassic and Classic periods leveraged their power to shape or reshape the landscapes of their urban centers according to their cosmovision, as demonstrations not only of their wealth and power, but as testaments to their central position within the Maya universe (Ashmore and Sabloff 2002).

Recently, a handful of scholars have posited that ancient Maya elites not only shaped the urban core to reflect cosmological principles, but also constructed cosmograms on a polity-wide scale, integrating outlying secondary centers and core ceremonial districts into a coherent schema that resembles the quincuncial structure of the Maya universe. These arguments take essentially two main forms. The first is that individual secondary centers located in directionally significant places hold cosmological significance based on their placement relative to their associated major center. For example, Ashmore (1991) identifies symbolism associated with the celestial tier of the

Maya cosmos at Copán's North Group, a set of architectural complexes located north of Copán's central district. At El Palmar, Mexico, Tsukamoto and colleagues (Tsukamoto et al. 2015) suggest a possible cosmological significance to the placement of the Guzman group, an elaborate residential compound of a titled non-royal elite lineage, and the causeway that connects the group to the polity center.

Other researchers identify polity-encompassing cosmological expressions that embody the quincunx structure of the cosmos through the placement of four outlying architectural groups and a marker of center. Maca (2002, 2006) proposes that a network of five U-shaped groups, all dating to the Late Classic period, are part of a quadripartite cosmogram that surrounds and defines the urban community of Copán. In this example, the western and eastern U-groups are oriented to towards the north and south respectively, while the northern and southern U-groups are oriented towards the rising and setting sun. The final U-group, marking center, is situated in the Great Plaza of the Principal Group. Maca (2002, 2006) argues that these sites may have served as processional points in counterclockwise circumambulation rituals, known from ethnographic and ethnohistoric sources (e.g. M. D. Coe 1965; Vogt 1985), as the orientations of the individual outlying U-groups rotate clockwise as one moves from point to point in a counterclockwise manner. Furthermore, a line drawn between the northern and southern points on the proposed cosmogram directly intersects with Structure 4, the radial pyramid at the heart of the Great Plaza. Maca (2006) argues that this is not coincidental, as Structure 4 is a cardinally oriented calendrical cosmogram

embodies the motion of the sun and the four-sided structure of the terrestrial world. The role of Structure 4 as a marker of center is reinforced by the presence of Stela A on its basal platform, which, as previously discussed, has potential cosmological significance (e.g. Marcus 1973; Newsome 2001b:179). Recently, Tourtellot and others (2000, 2002, 2003) proposed that the ancient Maya of La Milpa, Belize, constructed a similar quincuncial architectural cosmogram that encompassed their urban polity.

This dissertation is principally concerned with the La Milpa Cosmogram. Testing the cosmogram hypothesis asserted by Tourtellot and colleagues was the primary impetus for the Xaman Witz Archaeological Project. The difficulties of cosmology-based research are however, as mentioned previously, numerous and varied. There are relatively few incidents of material culture that would validate the La Milpa cosmogram hypothesis. Cosmological ideation does not necessarily have a single marker or set of indicators. Short of finding written texts that discuss cosmological ideation, which is unlikely in the Three Rivers Region, conclusive evidence would likely remain elusive. Early in the project, I decided that instead of engaging in research to find a specific marker that would prove or disprove the La Milpa cosmogram hypothesis, I would instead attempt to broadly reconstruct a range of possible purposes and significances at La Milpa North.

Theory Overview

The effort to reconstruct multiple meanings ascribed to La Milpa North, cosmological or otherwise, requires a consideration of multiplicity of viewpoints. As an elite household, possible ritual center, and prominent landmark on regional social

landscapes, La Milpa North was a multivalent place. A full reconstruction of the meanings associated with place is impossible due to the complexity and plurality of such experiences. Instead, this project aims to reconstruct, a generalized set of meanings based on what limited information is available. Conceptions of place are contingent on factors such as class, gender, and social status as well as familiarity with the setting, previous life experiences, among other considerations. Such markers of social difference are sometimes expressed through material culture. Theoretical frameworks that aid in the reconstruction of critical aspects of ancient lives connect material evidence to these aspects of social identity.

The Xaman Witz Archaeological Project employs a variety interrelated approaches to consider the position of La Milpa North within political, economic, social, and ideological spheres. Given the goals of this project and what is currently known about La Milpa North (e.g. Hammond and Tourtellot 2003; Heller, Kotsoglou, and Heindel 2015; Tourtellot et al. 2003), the most relevant theoretical toolkits to this effort are political and ritual economic theory, practice theory, and spatial and landscape approaches. Though varied, these theoretical perspectives are united by the common theme of production. Production is a transformative process that reproduces and modifies the physical and social conditions of future production, is always generated from the sociocultural and material contexts of its producers (Tilley 1982). As a conceptual framework, production recognizes the relationship between thought and action in a recursive process that begins with antecedent concepts and physical circumstances and

results in the manufacture of new conditions. Production is a historically constituted and interconnected series of generative experiences that produce memories, meanings, identities, and communities (Hendon 2010; Pauketat and Alt 2005). Therefore, production is deeply imbedded in time (Robin and Rothschild 2002), and is integral to the diachronic and integrative nature of a biography of place.

Political and Ritual Economic Approaches

Political economic approaches attempt to understand the relations of production, practices of consumption, strategies of accumulation, and ideologies, that function to create conditions that contribute to the establishment and continuation of differential relations of economic and political power (Hirth 1996). The connection between elite residences, household social relations, and the production of specialized sumptuary or status-enhancing goods has been well explored in the Maya region (e.g. Aoyama 2007; Gillespie 2000a; Hruby 2007; Inomata and Triadan 2000; Widmer 2009). For Maya elites, ideological and physical control over avenues of production and distribution enabled elites to consolidate authority and legitimize social difference by means of their distinctive material lifestyles (Trigger 2003:89). In itself, the production of prestige goods was a status-enhancing activity, and the identity of the producer and the location of the production, which often included elite households and palaces, augmented the value of products (Hruby 2007; Inomata 2007; Trigger 2003:358; Widmer 2009). Ancient Maya elites not only administered economic activities within their households and palaces, but also engaged in them. Their efforts contributed to the materialization of

social difference and ideology (McAnany, 2008). In summary, economic and ideological concerns were dialectically engaged, mutually constitutive, and integrated in ancient Maya societies (Freidel, Reese-Taylor, and Mora-Martin 2002; Hendon 2000, 2010; Hruby 2007).

Ritual economy perspectives investigate connections between ideology, ritual practice, and political economy. This approach recognizes that economic practices are often ritualized, ritual practices have economic components, and that economic and ritual activities communicate and constitute worldviews (McAnany and Wells 2008; Wells et al. 2007). Scholars working in Mesoamerica occasional use ritual economy theory to illuminate connections between political, ritual, and economic spheres (e.g. Spielmann, Carrasco, and Moctezuma 2007). This approach recognizes the material aspects of ritual performance and performative aspects of ritualized production that naturalize and reproduce sociopolitical and economic hierarchies (McAnany and Wood 2008). In addition, ritual economy theory considers spatial and socioeconomic distributions of the manufacture and consumption of ritual goods, and the contribution of these activities to the development, consolidation, and expression, of ideology and differential relations of power (Davis-Salazar, Carrasco, and Moctezuma 2007; Fash et al. 2007; Kovacevich, Carrasco, and Moctezuma 2007).

Together, the political and ritual economy perspectives recognize the conceptual and practical unity of ideological, economic, social, and political concerns for the ancient Maya. The political and ritual economy approach is relevant to a biography of place at La

Milpa North because of the connection between the residents of the site and the production of both utilitarian objects and goods requiring difficult to acquire materials that may have been subject to sumptuary customs or laws (Heller and Burns 2014). When applied to evidence of craft manufacture at La Milpa North, political and ritual economic theory elucidates the role of production in larger strategies related to the reproduction of elite economic and political power.

Practice Theory

Practice theory embeds the locus of social and cultural change in praxis, the materially and psychologically transformative acts of agency within structure and processes of structuration (Bourdieu 1977; Pauketat 2001). From this perspective, agendas, systems of belief, and preexisting social and material circumstances structure and inform the actions of individuals. In turn, these actions reproduce and modify social structure and the conditions of future endeavors (Giddens 1984; Silliman 2001). Moment-to-moment microscale activities accumulate to produce macroscale processes of social and material transformation (Pauketat, 2001). Practice theory places the mechanisms for social change in the hands of all individuals, regardless of wealth or social stature (Brown 2004; Yaeger and Canuto 2000), and reveals the roles of individuals in enacting meaningful transformations rather than assuming them to be absorbed by wider social processes (Robin 2003). The lens of practice theory can also be extended to examine communities of practice, which stems from a recognition that many material and ideational aspects of practice are socially shared (Hendon 2010:60). Because many of the

actions that reproduce and modify the conditions for future actions have material consequences, practice theory can link the archaeological record to generative experiences that produced objects, social relations, communities, and meanings (Pauketat, 2001; Pauketat & Alt, 2005).

Practice theory provides a powerful interpretive framework for this project because inhabitants of La Milpa North manufactured a range of material goods, both utilitarian and status-enhancing, and did so in distinct places within the landscape. La Milpa North is better understood as a multivalent locality through attention to spatial and material aspects of production, occupation, and ritual practice. Practice theory permits an exploration of the lives, ideations, and contributions to processes of social change, individuals across class and status lines through the material remains of their activities.

Social Landscape Approaches

Landscape archaeology, a set of complementary theoretical perspectives rather than a single unified paradigm (Siebert 2006), addresses questions through attention to architecture, civic plans, unbuilt spaces, and the distribution of artifacts and features on the landscape. Culture, ideation, and socioeconomic relations structure human interaction with landscapes, and through engagement with the landscape, human beings create, express, reproduce and modify economic conditions, belief systems, and community identities (Crumley 1999). Often repetitive and ritualized processes, interactions with the landscape leave identifiable material traces that enable archaeologists to discern aspects of ancient systems of belief, ideology, and social relations (Pauketat & Meskell, 2010).

Attention to space connects the materiality of the landscape to human thoughts and ideas, and therefore offers a promising method to explore the possibilities of what La Milpa North signified to the people who built and occupied this site throughout time.

Spatial and landscape approaches also recognize that spaces and landscapes are the results of processes of production, a transformative practice that reproduces and modifies conditions of future production (Lefebvre 1991). Through the lens of production, interactions with the landscape can be understood as recursive processes in which material and ideational aspects of place are reproduced or reinvented from antecedent physical and conceptual structures. This concept renders space as an arena for human activity that is simultaneously remade by human action (Knapp and Ashmore 1999). Produced spaces are fluid and dynamic (Robin and Rothschild 2002), imbued with social and political concerns generated from the sociocultural contexts of its creators (Bender 2002), and reflect the accumulated “decisions and dispositions” of its producers (Ashmore 2002a). Framing La Milpa North as a produced space connects archaeological data to symbolic and cognitive aspects of ancient spaces.

Spatial and landscape perspectives also recognize the power of space to structure human action, communicate social messages, convey appropriate choices, and naturalize relations of power (Rapoport 1982). In Mesoamerica, elite architects wielded this power on a monumental scale to further their own aggrandizement, demonstrate their control over labor and resources, and proclaim a sanctified place in the cosmic order (Ashmore, 1991; Trigger, 2003, p. 564). This project examines the strategic use of architectural

elements that control vision and movement and construct narratives that displayed and legitimized social difference at La Milpa North.

The architecture of La Milpa North, a high-status household, was intended to convey social messages, cosmographic or otherwise, through its form. There are however, often divisions in perceptions of spaces between planners and users. People from multiple social standpoints use and engage with a single space, creating meanings that diverge from those intended by planners and architects (Rapoport, 1982). An investigation of place must consider the viewpoints of multiple social actors (Rodman, 1992). Social and economic conditions that structure interactions with places have material effects and are therefore detectable through the archaeological record. Through this lens, it is possible to partially reconstruct hypothetical individuals and understand aspects of their lives that contribute to processes of meaning making, though such reconstructions are necessarily tentative and conditional on new evidence. While imperfect, in that the exact identities of social actors remain obfuscated, this approach can nevertheless generate insights by conceptualizing landscapes as a multivocal collections of places with meanings contingent on the social position of those who experienced it (e.g. Mack 2004).

La Milpa North, hypothesized to be part of a cosmogram, an elite residence, and site of economic activities, is best understood through a lens that allows for multiple meanings to be ascribed to a single space. Not only do social actors bring their own perspectives to bear on their interpretations of space, but also an individual may ascribe

several mutable meanings to a single place. For example, when subject to ritual transformations, spaces in which daily life occurs become sanctified (e.g. Gonlin 2007:85). Meanings assigned to a place may change at ritually significant times or simply when contemplated from alternative frames. Evaluating the architecture and assemblages of La Milpa North from a landscape perspective enables an understanding of La Milpa North as a place that embodied a plurality of significations.

Efforts to understand meanings ascribed to landscapes requires a reconstruction of an array of social actors, the ability to identify the material correlates of ideational processes, and the reconstruction of embodied experiences of those actors as they move through space. This project relies on previous scholarship regarding function of social class, economic standing, gender, and other factors that determine worldview for ancient Maya individuals, and uses the perspectives of practice theory and political/ritual economics to posit the existence of these well-understood groups at La Milpa North while exploring nuances of their specific material and historical circumstances. Attention to ancient Maya cosmological and ideological ideation, as expressed through built and unbuilt environments, connects actors to the critical structures that shape their interactions with place. The final necessary component remains the reconstruction of embodied experiences of place, an intersection between mental lives and sensory perceptions.

Understanding spatial experiences involves a consideration of active subjects, who move through, perceive, and interpret their environments. Attention to movement

connects places on the landscape and spaces within places into coherent wholes.

Movement is a negotiation of both the physical world and social and symbolic codes that are imbedded space and place (Rapoport 1982). The experience of moving through a place is critical to the reproduction of meanings imbued into places as well as the actors themselves (Certeau 1988), and is in itself a meaningful symbolic act (Snead 2002). An analysis of movement on multiple spatial scales connects what is known about ancient Maya social and ideological relations to the landscape of La Milpa North. On the scale of the polity, potential avenues of movement are considered as integrative mechanisms that bind discrete places into coherent social landscapes. On the scale of the site, the sensory perceptions of individuals as they move through the built environment of La Milpa North are reconstructed to connect ancient individuals to the spatial vernacular of the site.

Site level attention to movement relies on phenomenological analyses, which involve engagement with experiential aspects of landscapes to reconstruct the experiences of past actors. This approach begins with the premise that the body is the nexus for engagement with the world, as all experiences are mediated through embodiment. Recreating experiential components of movement through space enables archaeologists to posit aspects of ideation linked to those experiences (Brück 2005).

Phenomenological methods have traditionally relied on the rigorously documented experiences of archaeologists as they move through modern archaeological landscapes, and their projection of those experiences into the past (e.g. Tilley 1994).

Phenomenological analyses of this type are often criticized for being too simplistic in that

they cannot possibly account for each individual actor, irreproducible and therefore unscientific, the product of modern subjective observers (Fleming 2006), and reliant on human senses which are subject to variance in interpretation between cultures (Moore 2006).

Though these critiques are, in my view, valid, phenomenology nevertheless can produce meaningful insights into ancient lives and experiences where there are no other alternative methods to address these questions. To address some of these critiques, this project employs an emergent form of phenomenological analysis that utilizes digital three-dimensional reconstructions to reproduce certain visual and motile aspects of movement through ancient spaces. This slightly less subjective form of phenomenology can answer an array of questions regarding the possibilities of vision and movement that result from normal movement through the site. Given the limitations of this perspective, these inferences are not intended to be factual reproductions of the experiences of actual ancient individuals, but rather produce a generalized array of possibilities. Despite the somewhat vague and highly provisional nature of these insights, they nevertheless add value and nuance to interpretations when contextualized against the large body of research regarding culturally specific spatial vocabularies.

Conclusion

This project considers La Milpa North as a place where myriad individuals, imbedded in social relations of differential access to power, status, and resources, constructed diverse senses of place. In so doing, this project attempts to reconstruct the

diverse associations and meanings ancient Maya people developed and maintained with La Milpa North. If cosmological significances were assigned to La Milpa North, which I later argue was in fact the case, they were only part of a constellation of possible meanings constructed by the people who interacted with this place. Through the lenses of practice theory, political and ritual economic theory, and social landscape perspectives, this project explores a handful of these possible significations. These inferences are organized through a biography of place, a diachronic narrative of this singular place as imbedded in broader social landscapes from its inception to afterlife.

Chapter 3: Methods

The set of methods used by the Xaman Witz Archaeological Project were designed to accomplish the following goals at La Milpa North: 1) identify and record patterns of settlement in the research area; 2) establish the chronology and architectural history of the site; 3) determine the form and possible functions of structures within the site core; 4) locate and investigate areas of economic and household activities; 5) recover evidence of ideological beliefs pertaining to social relations and religious systems. This project employed settlement survey, digital topographic mapping, archaeological excavation, laboratory analysis, photogrammetric documentation, and digital site reconstructions to provide the data necessary to address the stated goals.

Survey and Mapping

To construct a more holistic and diachronic conception of La Milpa North as enmeshed in a broader community, research efforts concentrated on establishing local settlement patterns. These data provide the necessary context and framework from which further inferences regarding the site may be constructed. To accomplish this, survey and mapping was carried out within a one square kilometer area centered on the core of La Milpa North. Unfortunately, recent site formation processes, including the conversion of forest lands to pasture and erosion from weathering, rendered many smaller features unrecognizable. Therefore, settlement surveys conducted by this project are inherently biased toward the documentation of larger architectural mounds, which better withstood

land clearance and erosion. Despite these challenges, this project employed a variety of techniques to document ancient land use practices as completely as possible given the site conditions, including conducting pedestrian and aerial surveys, and digital topographic mapping.

Settlement Survey

Settlement data was gathered through pedestrian survey and drone-based aerial reconnaissance, provided by Arch Aerial LLC. La Milpa North's one kilometer square research area was divided into quadrants, with the center point on the central arm of structure 3301. Each quadrant was walked by a survey team, which searched for a variety of features, including structure mounds, artifact scatters, and other modifications to the landscape. Surveyors used a handheld Garmin 60CSx GPS receiver to record locational information of each feature. The accuracy of GPS points was improved by using the averaging feature of the Garmin unit, typically over a period of 10 minutes or until the device could resolve the approximate position of the feature within a two meter margin of error. Conditions did not always allow for this level of accuracy and GPS points were accepted if resolved within a four meter margin of error.

In addition to recording individual GPS points, surveyors observed potential archaeological features to determine their size and shape. To document structure mounds, mapping personnel used a variation of the Maler method to create prismatic representations of features. After identifying a mound, the dimensions were recorded using a measuring tape and sighting compass. Basal and upper mound corners were first

identified and marked. Given that mounds do not always accurately represent the structures beneath them, surveyors used their best judgment to balance the creation of a representation of the mound with their interpretation of the dimensions of the structure. Flexible 50 m tape measures were extended to measure distances between exterior basal corners or those at the interface of ground surface and mound, between interior corners identified at the apexes of the mound, and from adjacent basal and top corners. Using a region 2 Suunto sighting compass, accurate to $\frac{1}{4}$ degree, surveyors documented the orientation between designated points. Beginning in 2013, a TruPulse 360 R laser rangefinder with built-in azimuth and tilt sensors was used in lieu of tape and compass.

After recording architectural data by hand in the field, structure plan data was digitized and transcribed into a geographic information system (GIS). Digitization required transferring the raw data into a spreadsheet that rectified orientation measurements that were taken in azimuth degrees with Adobe Illustrator radians. This translation facilitated the creation of a digital polygonal plan map. When points failed to align, due to inaccuracies in field data collections, point averaging was used within Adobe Illustrator to rectify the lines. Once finalized in Illustrator, structure maps were exported to DXF file format, and georeferenced to their respective coordinates established by GPS data in ArcGIS. Non-structural features were handled in a similar matter.

Digital Topographic Mapping

Over the course of the 2010 field season, the core architecture of La Milpa North was mapped using a digital theodolite. Topographic mapping produced a three-dimensional point cloud, which when processed in ArcGIS, created a contour map accurate to half-meter intervals. The extents of these data cover an area approximately 265 meters east to west, and 150 meters north to south with the center arm of La Milpa North Str. 3303 as its center point (Figure 0.1). These data became the basis for more accurate plan maps of La Milpa North's site core, which replaced the tape and compass map produced by LMAP in 2000. In addition, digital topographic data was referenced extensively while creating three-dimensional reconstructions of the site.

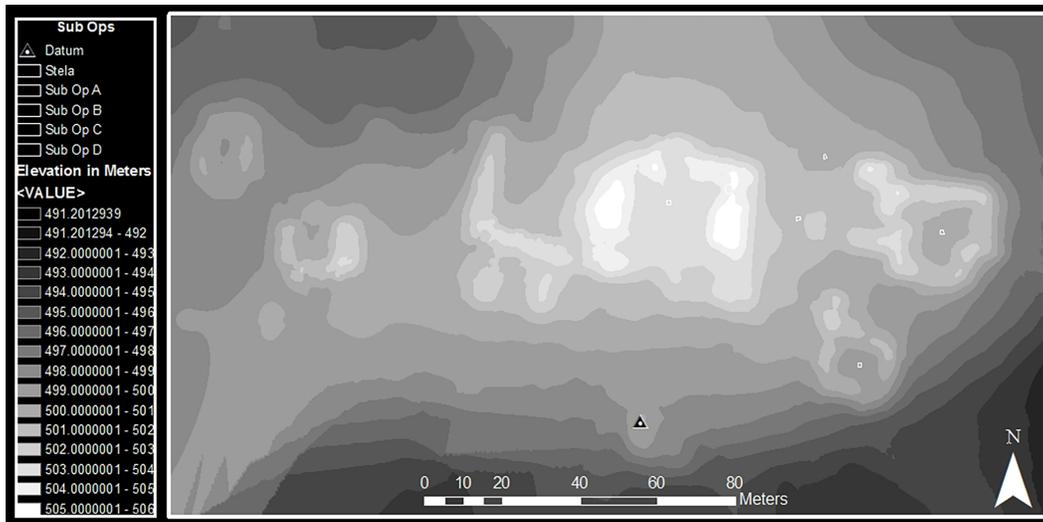


Figure 0.1. Topographic data collected in the site core of La Milpa North. Displayed at 1 meter contour intervals. Illustration by author based on data collected and processed by Eric Wettengel.

Digital topographic mapping and survey efforts were merged in ArcGIS to produce a map of all visible archaeological features on the landscape. These data were then integrated with GIS data compiled by previous survey and mapping projects in and

around the site of La Milpa (see Chapter 1), thereby placing the La Milpa North dataset in the context of larger polity.

Excavation Methods

Provenience Information

The Xaman Witz Archaeological Project, one of several independent projects operating under the auspices of the Programme for Belize Archaeological Project (PfBAP), employed a shared provenience system designed to facilitate the organization of data generated by projects operating in the Three Rivers Region. The PfBAP provenience system is a modified version of the Tikal System established by Coe and Haviland (1982) and employed by numerous projects within the Three Rivers Region (e.g. Houk and Zaro 2011b). Under the Tikal and PfBAP Systems, provenience is divided into successively smaller categories.

Under the PfBAP System, the first and most-encompassing designations are that of region and site. A regional designation defines a geographic subdivision of the Three Rivers Region. Sites then are further divisions of regions as defined by the extent of the research area of a single project. In this case, La Milpa North is associated with the Rio Bravo (RB) conservation area and was designated RB: LMN.

In the Tikal and PfBAP provenience systems, the designation below that of site is operation, which are sequentially numbered units of excavation or collection that occur within a given site. Operations are flexibly defined, and may be divided by contexts as was the case in Tikal (Coe and Haviland 1982:43), or by other means. In this case,

operations were defined by the methods employed during their investigation and are described below.

Each operation was divided into suboperations, which are the excavation or surface collection units that were investigated. All suboperations are quadrangular, and once established, could not be expanded to ensure proper context control. Each suboperation was assigned a unique letter designation in the sequence that excavation units were placed on the ground or surface collections occurred. The exception to these designations was when a suboperation needed to be expanded slightly to capture a feature or facilitate excavations in other suboperations. In such cases, excavators extended existing suboperations, though the process of designation proceeded as though a new suboperation was created, with the exception that an EXT suffix was appended to the original suboperation designation.

The final and smallest units of provenience are lots. Lots are units of excavation or collection that occur within suboperations. Typically, lots are numbered sequentially as excavations proceed vertically downwards, and therefore define excavated layers. They may in some cases also be used to define horizontal components of suboperations that are to be excavated or collected independently. Because they are the most precise level of provenience (Coe and Haviland 1982:42), excavations proceeded by lot, with one having to be completed before the next may be excavated. Each lot was documented via a standard PfBAP Lot Record Form (Figure 0.2), which provides for the documentation of provenience information, lot dimensions, lot depth, material collection, observations, and

interpretations as well as references to any photographs and illustrations that pertain to that specific lot.

PfBAP - Lot Record Form		RB _____	
Project: _____		Site _____	
Recorder: _____		Excavator(s): _____	
Operation _____ SubOp _____ Lot _____		Date Opened _____ Date Closed _____	
Lot Type (Check Appropriate) <input type="checkbox"/> Burial <input type="checkbox"/> Cache <input type="checkbox"/> Construction Fill <input type="checkbox"/> Floor <input type="checkbox"/> Hearth <input type="checkbox"/> Humus <input type="checkbox"/> Interface <input type="checkbox"/> Midden <input type="checkbox"/> Surface <input type="checkbox"/> Wall <input type="checkbox"/> Other _____			
Lot Location Horizontal _____ Vertical _____			
Lot Description 			
Materials Observed and Collected (O=Observed, C=Collected) <input type="checkbox"/> Bone <input type="checkbox"/> Ceramic <input type="checkbox"/> Groundstone <input type="checkbox"/> Lithic <input type="checkbox"/> Obsidian <input type="checkbox"/> Shell <input type="checkbox"/> Other _____		*Collected Samples (Check Appropriate and Define Below) <input type="checkbox"/> Botanical <input type="checkbox"/> Bone <input type="checkbox"/> Carbon <input type="checkbox"/> Flotation <input type="checkbox"/> Hydration <input type="checkbox"/> Soil <input type="checkbox"/> Other _____ <i>*ALL collected samples must be accompanied by a Sample Record Form</i>	
Association Schematic Physically Below _____ Physically Above _____ Associated With _____		Termination/Elevations <input type="checkbox"/> Cultural _____ (type) <input type="checkbox"/> Arbitrary _____ (type) Beginning Elevation _____ Ending Elevation _____ Total Thickness of Lot _____ (e.g., 10cm, 38cm, 1.2m, etc.)	
Documentation <i>Photographs</i> Photographer _____ B&W Roll _____ Frames _____ Color Roll _____ Frames _____		<i>Illustrations/Maps (Check Appropriate)</i> <input type="checkbox"/> Plan Map <input type="checkbox"/> Artifacts <input type="checkbox"/> Profile <input type="checkbox"/> Other _____	
Comment, Descriptions, Interpretations 			

Figure 0.2. Standard Programme for Belize Archaeological Project Lot Record Form.

In situations where multiple suboperations were used to excavate a single contiguous feature, suboperations were grouped into associations. Associations encompass multiple suboperations, allowing for the extension of excavations beyond the limits of a single suboperation. In these cases, associations were designated by the first suboperation from which all other contiguous suboperations were added.

Using this system, it becomes possible to refer to specific proveniences by their site, operation, suboperation, and lot designations. For instance, RB:LMN 2-A-3 references La Milpa North, operation 2, suboperation A, lot 3. This practice enables each context to remain distinct for laboratory analysis and reporting purposes while indicating the specific set of methods and practices employed in the excavation of those materials.

General Excavation Methods

In total, this project used seven distinct operations tailored to the requirements of specific contexts. While operations are individually tailored to the unique circumstances in which they are employed, they all conform to a generalized set of practices, hereafter referred to as general excavation methods.

In general, teams comprised of two to five individuals excavated all lots within suboperations. These teams typically consisted of one or more locally-hired field research assistants, one or more PfBAP staff members, and several undergraduate field school students, who were all under the supervision of a senior PfBAP staff member or myself. Whenever possible, these teams persisted throughout the excavation of a lot, with team members maintaining consistent roles, such as recorder, excavator, screener, micro-

scraper, etc., throughout the excavation of the lot. After the completion of the lot, team members usually rotated to a new role.

Excavation units, or suboperations, were laid out and oriented to magnetic north using two leveled tape measures, a sighting compass, and plumb bobs to maintain accurate geometry in the units. Excavation units generally conformed to standard 1x1 m or 1x2 m dimensions unless conditions dictated otherwise. If not already present, a datum was placed adjacent to the suboperation at an arbitrary elevation above the initial surface level of the area to be excavated. Datums could then be used to record elevation data throughout the excavation process. Artifact recovery was conducted using ¼ inch screens, unless particularly fine artifacts were present, in which case excavated materials were sifted through a 1 mm screen. All observed ceramics, lithics, and special finds were collected.

Each suboperation was excavated in one or more lots, terminated when a feature or stratigraphic change was observed or, in the absence of such a change, at an arbitrary depth of no greater than 20 centimeters. At its termination, each lot was photographed, or, in special cases, digitally modeled in 3D using photogrammetric methods detailed below. Student excavators recorded information from each lot on standard PfbAP lot forms (Figure 1). In addition, I recorded notes and took photographs at the opening and closing of each lot to supplement lot forms.

When excavations of a suboperation were complete, excavators mapped two contiguous profiles of the suboperation that best represented the stratigraphy of the

excavation unit. Features identified within suboperations were photographed, plan mapped, photomodeled, or some combination thereof to document the feature as thoroughly as possible.

The methods outlined above were applied to most excavation units, although circumstances occasionally required the use of alternate methods. These situations included contexts that yielded evidence of production, potential caches, ritual deposits, and architectural associations. Because of the variety of contexts encountered at La Milpa North, this project designated seven distinct operations, each with specific methods tailored to various contextual circumstances.

Operation 1

Operation 1 was a series of test pits employed to establish the chronology, and stratigraphy of various areas throughout the site. As this project was primarily focused on excavating contexts in and around the palatial core of the site, Operation 1 excavation units were deployed in each of the courtyards and plazas of La Milpa North's palatial core. In addition, several Operation 1 test pits were excavated in areas adjacent to structures to diversify the data collected and establish stratigraphy for unbuilt areas of the site. All Operation 1 units conformed to a standard 1x1 meter size and were oriented to magnetic north. During excavation, lots were terminated upon observed stratigraphic changes or at an arbitrary depth of no greater than 20 cm. Excavators screened all matrices through a ¼ inch screen. The author or, on rare occasion, project staff, photographed each lot in its opening and closing states, and when warranted, drew sketch

or plan maps. When the last lot of the unit was closed, student excavators and staff mapped the vertical profile of each unit on two contiguous sides determined to best represent the stratigraphy of the unit. Findings from Operation 1 units established general chronological and stratigraphic data and contributed to this project's understanding of the occupation and architectural history of La Milpa North.

Operation 2

To determine the form and function of structures at La Milpa North, this project employed special methods under Operation 2. This operation included excavation strategies designed to establish construction techniques and phases as well as the form and stylistic elements of La Milpa North's architecture. These operations proceeded in one of two ways based on what was known regarding the context. When the stratigraphy of a unit was unknown, excavations proceeded per the general excavation method outlined previously. In cases where the stratigraphy was already established by another suboperation, excavations proceeded more rapidly by removing overburden to a depth of approximately 10 cm above previously identified surfaces or other features. When removing overburden in cases where the matrix was clearly comprised of collapsed masonry ceilings and walls, excavators did not screen materials, though they did hand collect the very few artifacts observed in these contexts. When excavators had removed overburden to a depth of approximately 10 cm above surface levels, they closed the lot. In the next lot, excavators meticulously removed the remaining matrix, taking care to not disturb artifacts and to leave them in-situ. All matrix of this type was screened through 1

mm screens to capture artifacts potentially overlooked by larger gauge screens. Whenever possible, artifacts remained in their original location until they could be photogrammetrically documented, resulting in a three-dimensional digital representation of the spatial distribution of surface finds within interior spaces.

Operation 3

The purpose of Operation 3 was to recover evidence of production and ritual activities in and around La Milpa North using excavation and recovery strategies that were more likely to capture materials missed through standard excavation procedures. These techniques include excavating in lots equal to or less than 10 cm for additional context control, screening removed materials through a 1mm screen, and the collection of a portion of the matrix for floatation to recover light and heavy fraction materials in the amount of at least three liters per lot. This method, developed by Widmer (2009), is an effective means of recovering evidence of lapidary industry and other production activities that leave very fine debitage or little waste and well suited to the recovery of small finds.

Operation 4

Operation 4 was reserved for detailed architectural excavations of domestic architecture. to determine the form and possible function of structures on the periphery of the palatial core of the site. Due to limitations in time and resources, this project has not conducted Operation 4 excavations at this point.

Operation 5

The purpose of Operation 5 was to investigate monuments found at the site. Operation 5 units were limited to the excavation of Stela 22. The excavation methods deployed in for this operation generally conformed to the general excavation methods, apart from documentation procedures. Documentation proceeded by creating an intricately detailed plan map, and in subsequent years, de-backfilling the operation to create a high-resolution 3D model of the monument using the photogrammetric techniques discussed below.

Operation 6

When surveyors located diagnostic surface finds, including ceramic, lithic, and other materials, they used Operation 6 to formally collect these materials. Operation 6 suboperations were used to collect both individual artifacts as well as more extensive artifact scatters. When collecting a single artifact, surveyors used a standard Lot Record Form to give each collection area a unique designation. The location of the find was recorded with a margin of error of approximately +/- 4 m using a handheld GPS unit. In cases where artifact scatters were collected, a single GPS point was taken near the approximate center of the feature, and the size of the collection area was recorded and photographed if necessary.

Operation 7

Operation 7 was a shovel-test pit operation used to rapidly explore an area to locate subsurface features. Excavators deployed arrays of Lot 7 suboperations to locate

middens in two residential contexts and deployed a single Operation 7 unit in the center of a depression feature. Operation 7 units conformed to a 30 cm size, and were deployed around domestic architecture at 1 meter intervals, providing data regarding the density of artifacts around the feature. When a midden was located, excavators deployed other, more formal, excavation units on the area to document these features and recover associated artifacts.

Laboratory Analysis and Digital Documentation

Ceramic Analysis

To establish chronology, Lauren Sullivan, ceramicist for the PfBAP, conducted traditional type-variety analysis on the ceramic materials collected by this project. In type variety analysis, types are defined by groups of shared characteristics while varieties represent variations within types (Gifford 1960). This process first involves sorting and counting rim and body sherds, attempting to find refitting sherds, and in some cases, establish a minimum number of vessels. Sherds were then identified as belonging to type categories and variety subcategories based on visual attributes such as surface treatment, decoration, and paste (Sullivan 2012). The type-variety categories were then compared to seriation sequences for the Three Rivers Region and La Milpa (e.g. Sagebiel 2005) to establish chronological information for each excavation lot. In instances with particularly good contexts, such as those recovered from interior and exterior surface levels, formal attributes of vessels were also extrapolated from a visual inspection of diagnostic sherds.

Lithic Analysis

This project conducted lithic analysis on lithic debitage and tools located found in primary contexts. Such contexts included areas where lithic production is thought to have occurred, where stone tools were involved in other productive activities, and where they may have been part of a ritual deposit. Lithics recovered from construction fill contexts were not analyzed beyond a basic count of the numbers of tools and debitage.

In areas believed to be associated with the production of stone tools, Theresa Heindel (Heller et al. 2015) conducted the analysis of macrodebitage (debitage captured by a ¼ inch screen). Employing a lithic typology developed for Belize River Valley established by Jon VandenBosch's (1999) dissertation, Heindel sorted all lithics into categories including flakes, expedient tools, which are flakes repurposed as tools without significant alteration as evinced by the presence of use-wear on the edges, and formal tools, which have a definable morphology in reference to established tool types. Flakes that did not contain use-wear were further sorted based on the stage of production they evince into primary, secondary, and tertiary production/reduction categories.

Each phase of lithic tool production leaves identifying markers on the debitage removed from the tool. These markers enable the categorization of debitage by stage of production. Primary, or first stage, reduction involves decertification, or removing the outer layer of the stone. At this stage of production, a percussive movement and hard hammer is commonly used, generating large, coarse flakes with prominent bulbs of percussion (Patten 1999; VandenBosch 1999; Whittaker 1994; Whittaker et al. 2009).

Typically, primary reduction flakes will have 50% or more cortex remain on their dorsal surface, and fewer than two flake scars. In addition, chunks and nodules are observed more often in this stage. Second stage reduction involves manipulating the preform created by primary stage reduction and therefore requires more precision. Platform preparation, or abrading the edge with a stone to increase its strength, is commonplace and leaves facets on flake platforms (Whittaker 1994:101). Hard hammers or soft hammers may be used during second stage reduction, and fewer nodules and more chunks and shatter are produced during this stage. Soft hammer does not create bulbs of percussion, and instead produces lipped platforms. As the second stage of lithic reduction is focused on thinning, less than 50% of flakes may still around 25% cortex on their dorsal surface. The third and final stage of reduction puts finishing touches on the tool through additional thinning and sharpening. At this stage, a soft hammer is often used. Flakes from this final stage of production generally have no cortex and over three flake scars.

In addition to debitage analysis, lithic tools and tool fragments collected from primary contexts, such as interior and exterior floors, courtyards, benches, and so forth, were analyzed to determine tool type. Furthermore, this project used a low-power microscope to examine wear on the edges of a selection of tools to determine the function of primary context assemblages.

Portable X-Ray Florescence

Recently, archaeologists have made extensive use of portable X-Ray Florescence

(PXRF) technologies as a non-destructive means to determine the chemical compositions of artifacts and soils and establish potential source areas for the tested materials. Two independent projects used PXRF devices to source a selection of artifacts collected by this project. Walter Beckwith (2013) sampled a collection of 15 obsidian blade fragments retrieved from La Milpa North, and Tawny Tibbits (Tibbits, Powis, and Harrison-Buck 2015) sourced granite objects from the site.

PXRF machines are handheld devices that emit x-rays into a sample material. X-ray radiation displaces electrons from inner orbital shells and measures the energy, dispersed as photons, when outer orbital shell electrons move to lower orbits. Distances between orbital shells vary between elements, as does the amount of energy released by the transition to lower orbits. Precise measurements of the energy released from this process may be used to determine which elements are present in the sample. By comparing these data to the composition of samples taken from known raw material sources, it is possible to establish a point of origin of the material.

Beckwith (2013) and Tibbits and colleagues (2015) sampled obsidian and granite artifacts retrieved from La Milpa North and compared the chemical composition of these objects to samples collected at known deposits, which provided points of origin for all tested materials.

Visual Obsidian Sourcing

Obsidian samples that were not sourced using Portable X-Ray Florescence were instead visually sourced by Dr. Rissa Trachman.

Photogrammetry

In 2013, this project began using photogrammetric techniques to create high-resolution three-dimensional models of excavated features and in-situ artifact assemblages. Using methods similar to those employed by Jeroen de Reu and colleagues (2013), this process involved first placing scale and orientation markers, consisting of a 25 cm scale arrow oriented to magnetic north, and a vertically oriented 30 cm scale. Once the scales were placed, the author then took a series of photographs with approximately 1/3rd image overlap on each side to provide photographic coverage of the entire feature from multiple perspectives. Photos were then imported into Agisoft Photoscan, wherein the software's algorithms processed all photographs to identify points held in common by two or more images. Using principles of triangulation Photoscan then established the relative position of identified common points and the location of the camera in each photograph in a three-dimensional local coordinate system. Through additional processing, Photoscan reconstructed a dense point cloud, generating between 100,000 and 20 million data points that include 3D spatial data in a local coordinate system as well as color information as determined from photographs.

Depending on the desired output, various settings were used to create models of a manageable resolution for digital display and use, or to maximize the quantity and accuracy of the data at the expense of rapid visualization and interaction with the dataset. From the dense point cloud data, Photoscan created a digital reconstruction of the surface of the feature using a mesh of interconnected polygons. Photoscan was then used to

overlay texture bitmaps, as derived from photographs, to add further detail to feature reconstructions. The models were scaled to real-world unit sizes using Photoscan's scale bar feature. Digital markers were positioned over photographs of scale bars placed in excavation units and the known distances between markers were input in the software package. These markers then acted as reference for the real-world scaling of the entire digital model.

In cases where excavation associations were revisited or expanded in subsequent field seasons, contiguous features were stitched together using either Photoscan where possible, using point markers to inform the program of overlapping segments of the models, or in Meshlab using point-based gluing tools. The product of these efforts was a series of three-dimensional models of architectural features and the assemblages located within containing hundreds of thousands to tens of millions of data points.

Photogrammetric meshes were also used to create orthorectified 2D images and 3D models of excavation units. 3D models of excavation units were translated from arbitrary local coordinate systems used by Photoscan to real-world cartographic coordinate systems by georeferencing models in Google SketchUp and ArcGIS based on locational data taken from a Garmin handheld GPS points recorded on datums and known distances between datums and unit associations.

In addition to architectural features, photogrammetric techniques were used to document a selection of notable artifacts as well. In these cases, one complete side of the artifact was photographed in a series of twelve or more overlapping photos. Then the

artifact was flipped over and re-photographed to capture its other side. Two models, one of each side, were then constructed in Photoscan and stitched together using point-based merging to fully reconstruct the artifact in digital space. Subsequently, the artifact model was scaled to its real-world size using by rectifying scale markers in Photoscan with a scale bar placed next to the object.

3D and Virtual Reality Reconstructions

Photogrammetry products, as well more traditional data including digital topographic mapping and tape-and-compass mapping, were also used as a basis to create an interpretive 3D model of the ancient architectural landscape of Xaman Witz and La Milpa North as it may have appeared in the final phases of its construction and occupation. The 3D reconstruction was created using Trimble Sketchup, a three-dimensional modeling application. The outputs of both the Sketchup reconstruction and photogrammetric modeling were integrated into a virtual reality environment for further phenomenological study (Chapter 7).

Summary

Research at La Milpa North presented a complex set of practical challenges that required a flexible set of methods to address. The complexity of the assemblage, resource constraints, and ambitious project goals combined with the deteriorating condition of the site necessitated the rapid gathering of data. The methods outlined above facilitated the swift collection of a broad data set while conferring enough flexible to follow new information on an ad-hoc basis or switch methods when necessary. By employing

multiple survey and excavation strategies, this project sought a balance between the pace of data collection and the accuracy and completeness of the collected information. In addition, technological advancements, specifically the move toward photogrammetric documentation, drone-based aerial survey, and handheld laser range-finding mapping equipment also contributed to the pace at which data could be collected in the field and analyzed later through digital means. In summary, these methods produced a complex and effective, though ultimately incomplete, representation of La Milpa North.

Chapter 4: Culture and Construction History

On the apex of the hill at Xaman Witz, lies La Milpa North, a Late to Terminal Classic hilltop elite residence and civic center whose prominent hilltop on the regional landscape was known to the ancient Maya beginning in at least the Early Classic period and abandoned in the Terminal Classic (Figure 0.1). Chapter One introduced these broad temporal spans, and more refined spans are discussed below. In more recent decades, the hilltop has served as a training and observation point for British military and Belizean interdiction forces, and as pasture land owned by a Mennonite family estate. In this chapter, I present data gathered by the Xaman Witz Archaeological Project (XWAP), to construct a narrative regarding the social function of this landscape from the earliest traces of occupation to the present day. I begin with a discussion of the results of surface topological surveys in the form of a palimpsest description of the site. Where available, I also present excavation and/or surface collection data that is relevant to the chronology of the feature being described. In a subsequent section, I reconstruct a site chronology by synthesizing previous excavation data with my own. In so doing, I offer broad interpretations of the function of the site at various time periods, from the Early Classic to the present day based on the most outstanding features of the architectural and artefactual assemblages of La Milpa North.

Ceramic Chronology for the Three Rivers Region			
DATE	TIME PERIOD	UAXACTUN	COLHA
1400	POSTCLASSIC		RANAS
1300			CANOS
1200			YALAM
1100			
1000			
900	Terminal		
800	Late	TEPEU	3
700			2
600			1
500	Early	TZAKOL	3
400			2
300			1
200	(Protoclassic)	CHICANEL	BLOSSOM BANK
100			
0			
AD	Late		ONECIMO
BC			
100			
200	Middle	MAMOM	CHIWA LF
300			EF
400			
500	Early		BOLAY
600			
700			
800			
900			
1000			
1100			
1200			
1300			
1400			

Figure 0.1. Ceramic chronology of the Three Rivers Region. (after Sullivan 1997, pg. 41)

The Xaman Witz Archaeological Project (XWAP) differentiates between zones on the landscape of its 1 x 1 km research area by designating two separate areas of interest; Xaman Witz, used to describe the entirety of the 1 km square research area of

XWAP, and La Milpa North, a series of structure and courtyard groups originally mapped and tested by Tourtellot and colleagues (2000), built by the Maya in the Classic period on the apex of the hilltop at the center of the XWAP research area.

La Milpa North Core Structures

I extend LaMAP's original definition of La Milpa North (Hammond et al. 1998; Tourtellot et al. 2000, 2002, 2003) to include structure mounds that may be important to the central functions with the core site. These determinations are based on formal factors such as the spatial relationships created by their placement on the landscape and formal qualities of the collapsed structure. In this revised scheme, the central precinct of La Milpa North is defined by a series of landscape modifications to create the foundation for a series of large structures in an interrelated plan. This entire program features several structures peripheral to the six structures of La Milpa North as documented and discussed by LaMAP (*ibid.*).

The core of La Milpa North, as originally mapped by LaMAP is a series of four structure groups that surround courtyards situated to the east and west of a structure group that enclose two plazuelas, and a small structure mound placed between the larger structure groups. This arrangement has a strong east-west alignment, spanning 210 m in length (along the east-west axis), as measured from the western edge of Structure 3305 to the eastern edge of Structure 3301 and 70 m in total width (along the north-south axis) (Figure 0.2).

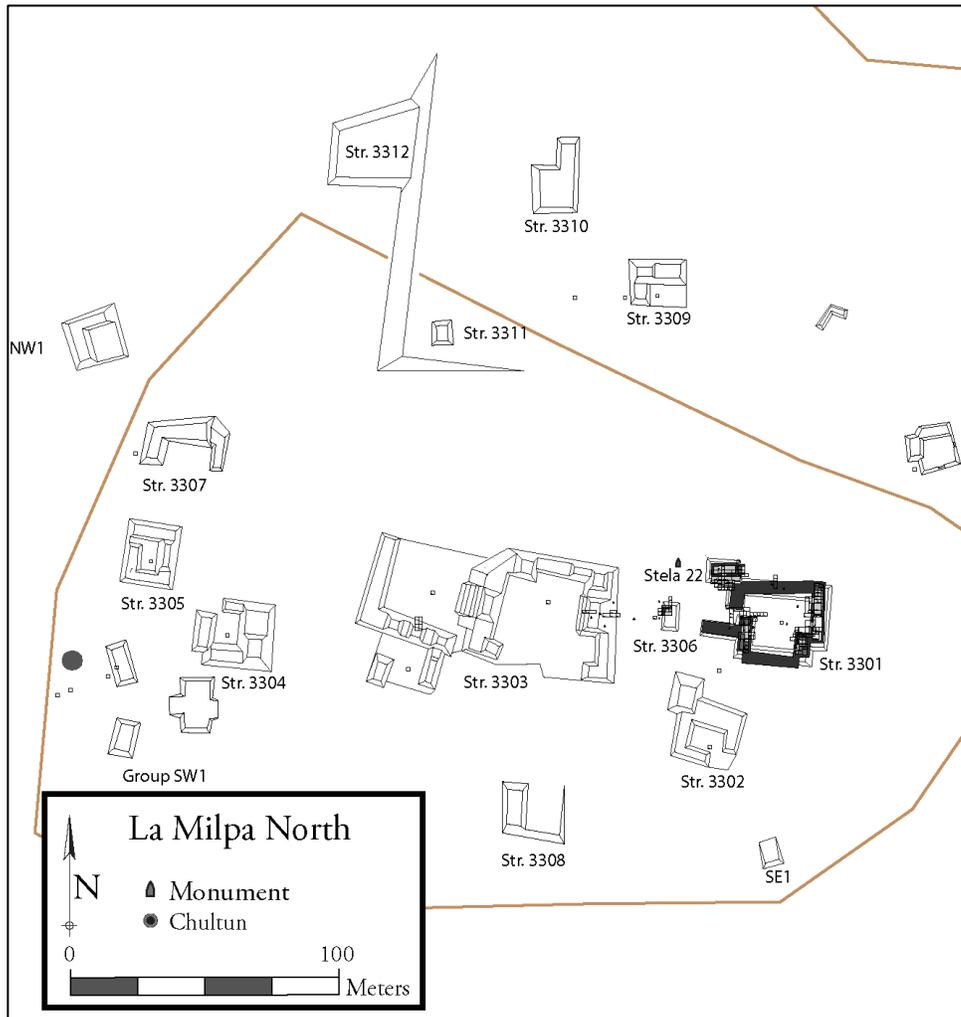


Figure 0.2: La Milpa North Core and Peripheral Architecture. 180 m elevation topo line also present. Illustration by author.

Structure 3301

Structure 3301 is an enclosed courtyard architectural group that was intensively investigated by XWAP throughout the 2012 to 2015 field seasons (Figure 0.3). Located on the northeastern quadrant of La Milpa North, Structure 3301 occupies a footprint of approximately 40 m along its east-west axis and 25 m along the north-south axis. The courtyard created by the architectural group of Structure 3301 is approximately 20 m in

construction fill materials on the north, west, and south sides of the structure and Suboperation 1-A, a 1x1 meter test pit designed to capture the stratigraphic profile of the courtyard from surface to bedrock and to recover ceramic materials for seriation dating. Suboperation 1-A was excavated to a depth of 118 cm from surface to bedrock. With the exception of lot 1-A-1, which excavated a humus layer, the matrix was composed of a loose light-grayish brown soil between limestone cobbles and lithic production waste materials repurposed as construction fill (Figure 0.4). The lithic waste materials consisted of many large tested cores, unfinished or broken bifacially-flaked stones, debitage, and microliths. Several large stones lie in the northwest corner of the unit and were likely used to retain smaller cobble fill materials in the process of elevating the courtyard with limestone cobbles and lithic debitage. All ceramic materials in Suboperation A-1 dated to the Tepeu 2/3 phase of the Late Classic period. No evidence of multiple construction phases was identified in the stratigraphy of this suboperation. Suboperation 1-A suggests that the platform on which Structure 3301 was built was erected in a single construction phase in the Late Classic Period. The nearly 120 cm distance between bedrock and the courtyard's surface in this area suggests a significant investment, in terms of labor and materials, occurred in one phase in the Late Classic period (Heller 2011).

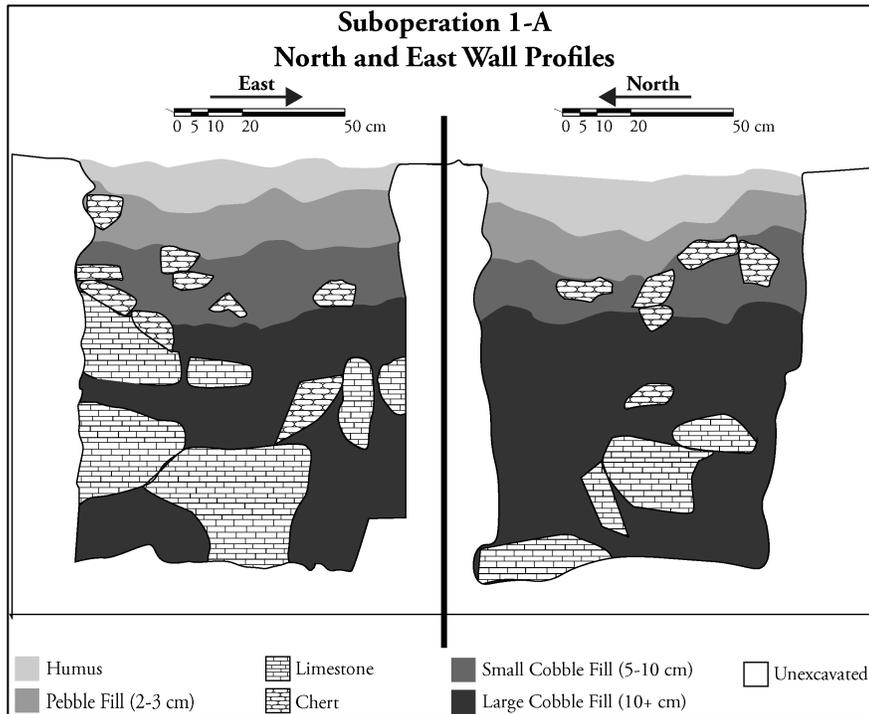


Figure 0.4: Suboperation 1-A, north and east wall profiles. Illustration by author.

Multiple excavation units recovered evidence of a plaster surfacing that once covered the entirety of the Structure 3301 courtyard and entryway. This plaster surface was likely less than 3 cm in most areas and did not preserve unless covered and protected by dense collapse materials from structures and could not be observed in most contexts. Nevertheless, the surface level of the courtyard could be determined by observing the upper extents of the small cobble fill layers that were universally encountered in courtyard contexts. Furthermore, the stratigraphy of suboperations 2-L, 2-N, 2-R, 2-Q, and 2-T suggests that the plastered surface may have had a grade of -2 to -3 degrees from west to east. Therefore, it likely that rainwater either drained eastward or collected on the east side of this courtyard.

The exterior of the Structure 3301 platform was surrounded by a packed earth surface placed atop a construction fill layer used, where necessary, to create a level surface surrounding the structure. This surface was located by suboperation 1-J to the south, 1-T and 2-AG directly to the north of Structure 3301, which suggests that it encompassed this platform at least to the north and south, if not all sides. The full extents of this packed earth surface are unknown, as significantly more excavation would be required to determine its extents and form.

Structure 3301 Entryway

The only known means of access to the courtyard is a single entryway, located on the west side of the 3301 Courtyard. The threshold of the Structure 3301 entryway was excavated in 2012 by the 1-K association (Figure 0.3), while the north side of the exterior was excavated in 2015 by the 2-CL association. The entryway has two distinct portions, beginning with a wider plan to the west and narrowing significantly just prior to entering the courtyard proper.

Structure 3301 Entryway West

Framing the west portion of the entryway are two main structure mounds. Along the northern edge is a rectilinear feature, approximately 10 x 7.5 m in length and width, with steep slopes on its northern, eastern and western sides, and a more gradual slope on its southern side. A large tree and its root system have visibly disturbed architectural alignments of the western side of this feature. At its highest summit point from the

surface of the courtyard, this part of the Structure 3301 mound is elevated 3.5 m above the surface level of the entryway.

The 2-CL association, excavated in 2015 (Heller 2016), revealed a complex architectural feature underneath the mound that defines the northern extent of the west portion of the Structure 3301 entryway. The architecture revealed by 2-CL consists of a set of four stairs leading to a platform with a corbel vaulted limestone masonry structure, designated Room 6, and placed at its apex. The platform on which Room 6 sits is elevated 1.5 m above the ground surface. Although conditions of preservation, which were particularly poor on the north and east sides of the platform, prohibited exact measurements, the platform is roughly 5.75 m in width and 8.75 m in length, with a 14.4 m² to the south of Room 6. Two non-load-bearing walls abut the eastern side of this feature's substructure. These walls create a small semi-enclosed room, designated Room 7, which is accessible from its east side and has a well-preserved plaster floor and a low-lying limestone masonry and plaster bench on the western side of the room.

The staircase found in 2-CL consists of four stairs constructed from faced limestone blocks running 4.11 m east-west at a bearing of 86°. This south-facing staircase abuts the easternmost exterior wall of the north side of Structure 3301, indicating that the staircase post-dates this wall, likely part of a major remodeling program that enclosed the Structure 3301 courtyard and constrained the entryway (see below). The few ceramics recovered from these excavations dated to the Tepeu 2-3 phase, indicating that this remodeling episode occurred in the Terminal Classic period. The staircase was

constructed using a limestone cobble fill that did not contain either dark soils or other indicators of household refuse and is therefore more closely related to the fill used to stabilize vault-supporting walls than that used to elevate courtyards found elsewhere within Structure 3301. The basal stair is slightly longer than the other three, and measures 49 cm in length, while the other three steps were approximately 39 cm in length. The bottom two stairs were 32 cm in height, while the upper stair was 28 cm in height. The final step leading to the platform area was 27 cm in height.

Room 6 is defined by walls approximately 80 cm in thickness, thick enough to support a limestone masonry vaulted ceiling, with a 1.48 m wide doorway on the south side of the room. This configuration encloses an interior plaster floor elevated from the substructure platform by 23 cm. A corbel vault spanned the east-west run of the room but has since collapsed. Only part of the southwestern wall remained standing. The northern, western, and eastern walls collapsed entirely. Fortunately, the preservation of the plaster floor was excellent, which allowed the interior dimensions and entryway to be defined with precision. Room 6 is 2.15 m in width and 6.25 m in length. Unlike all other excavated rooms in the Structure 3301 complex, Room 6 contained no interior features, such as benches or niches, and no artifacts were recovered in-situ.

Suboperations 2-DN, 2-DQ, and 2-DR, to the east of Room 6, revealed that the platform was constructed by repurposing a previous limestone masonry building. Three in-filled window features, in various conditions of preservation, were identified on the eastern side of this building. The placement of these windows would capture morning

sunlight, likely to illuminate productive activities that occurred within this room. To construct the platform on which Room 6 would be built, the vault of this previous room was removed, and its interior spaces were packed with construction fill to create a stable platform.

As part of the remodeling program that used a previous structure to create a platform for Room 6, or occurring after it, Room 7 was constructed by placing two walls, each approximately 50 cm in thickness, abutting the eastern side of the Room 6 platform. These walls are too slender to support a corbel vault, and no vault stones were located in these excavations, indicating that Room 7 most likely featured a perishable superstructure. Approximately 87 cm into the room, excavations encountered a low bench, 17 cm in height, 1.12 m in length, and 1.9 m in width. The plaster of the northwest corner of this bench was heavily scorched from one or more burning episodes that occurred within the room. Ceramic materials were also located directly above the plaster floor, many of which refit, though there were no whole or nearly complete vessels were located in this space.

Adjacent and to the south of Room 7, excavations in suboperation 2-DG encountered a midden consisting of a high volume of ceramic materials deposited in the corner formed by the junction of the Room 6 platform, the southern exterior wall of Room 7 and the northern wall of Structure 3301. Unfortunately, this midden was located near the end of the project and could not be fully excavated. Therefore, only a 25 x 25 cm

area was sampled (lot 2-DG-2). Recovered ceramics from this context date exclusively to the Tepeu 3 period, placing the deposit firmly in the Terminal Classic.

On the southern side of the exterior of the Structure 3301 entryway lay a mound, approximately 10 x 5 m on its base and elevated 1 meter from the entryway surface. Together, these two mounds enclose a 10.5 by 6 m entryway that narrows considerably at the threshold to the courtyard. Suboperation 2-G exposed an exterior masonry alignment along the wall of this structure that had three courses of tight fitting masonry limestone blocks remaining. In addition, a thin layer of plaster remained at the base of the lowest course of stone, suggesting that this entire Structure 3301 entryway was once surfaced by a 2-3 cm plaster layer (Heller 2013).

Structure 3301 Entryway Threshold

The narrow threshold of the entryway to the Structure 3301 courtyard is formed by two structure mounds placed along a north-south axis. The northern structure, holds the highest point of the Structure 3301 mound and stands approximately 4.25 m above the level of the courtyard surface at one point north of the entryway. This structure abuts the southeast corner of mound that forms the northern extent of the exterior entryway and contains Rooms 6 and 7, and the east-west oriented structure that defines the northern extent of the Structure 3301 courtyard. The 1-K association revealed a well-preserved limestone masonry wall that runs east-west and defines the northern part of the entryway. This wall was placed on densely-pack small cobble (5-10 cm) construction fill and contained as many as 9 preserved courses of shaped limestone blocks set in masonry

fashion. These blocks adhere to a fairly uniform pattern of placement, with multiple courses of larger yet more fragile and roughly square stones set above five courses of rectangular smaller stones (Figure 0.5).

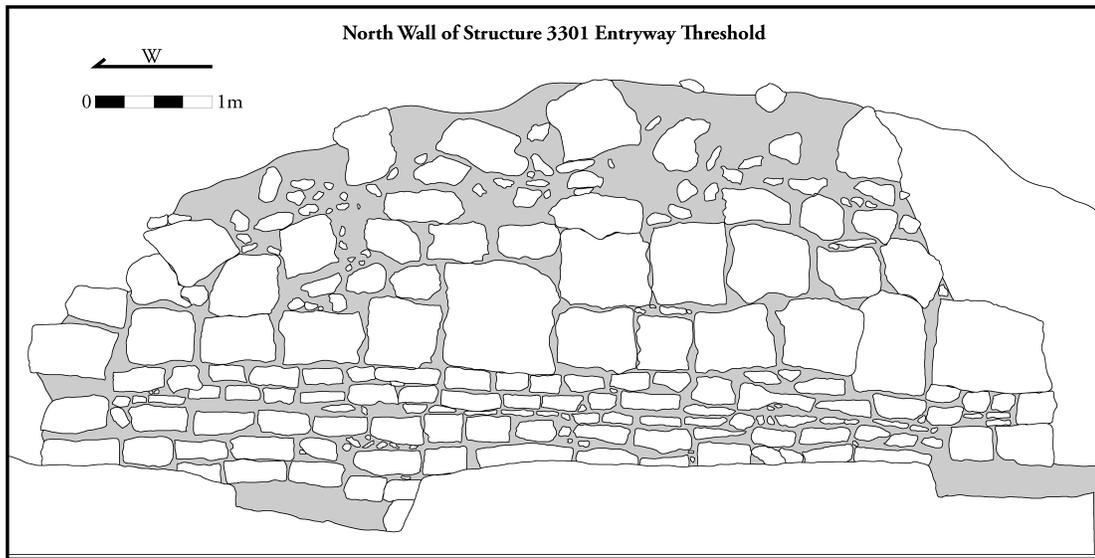


Figure 0.5: Profile view of the North Wall of the Structure 3301 Entryway Threshold. Illustration by author.

The structure on the southern edge of the Structure 3301 entryway threshold, the exterior of Room 5, is adjoined to the southern structure of the western portion of the entryway just north of center mass. The entryway threshold itself is relatively constrained, measuring just 1.4 m wide. Suboperation 2-J, 2-K, 2-M, 2-O and 2-P exposed the exterior masonry wall that defines the southern edge of this portion of the entryway (Figure 0.6). The construction style of this structure differs considerably from that of the north side of the entryway threshold as it does not use courses of small stone above the surface level.

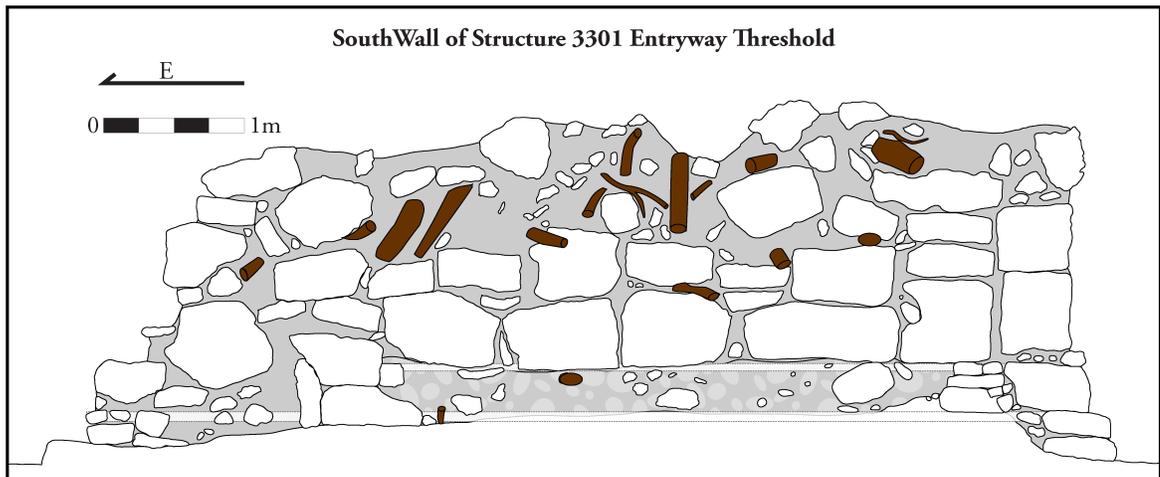


Figure 0.6: South Wall of the Structure 3301 Entryway Threshold. Dark elements represent tree roots. Illustration by author.

Several notable artifacts were located in the excavations of the entryway.

Three partial water jars in the Cayo Unslipped style were found along the southern portion of the entryway, possibly left in situ and destroyed by the collapse of the architecture in this area. In addition, a bifacially flaked spear point was located in 2-T, just as the entryway transitions into the courtyard.

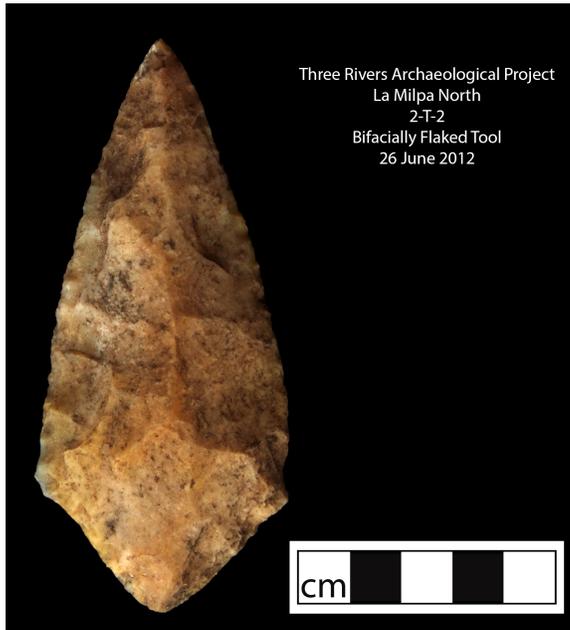


Figure 0.7. Bifacially flaked tool located in 2-T-2. Photograph by author.

Structure 3301 Northern Arm

The northern edge of the courtyard is defined by a mound running along a roughly true east-west axis and is approximately 5 m in width and 20 m in length. This portion of the structure is approximately 1.75 m in height at its center point, and slopes gently downwards from east to west, likely the result of erosion. This portion of the Structure 3301 is largely unexcavated with the exception of the 1-T association, consisting of a 1 x 1 m test pit and an associated 1 x 2 meter Operation 2 excavation unit designated 2-AG. The purpose of the 1-T association was to excavate along a portion of the wall on the north side exterior of structure 1 in order to further define the architecture. Suboperation 1-T was designed to provide a stratigraphic level from which to best approach the exterior of the structure that defines the northern extents of the Structure 3301 courtyard. Suboperation 2-AG revealed an architectural alignment, with relatively poor

preservation, consisting of three courses of stone on the verge of complete collapse, having been pushed outward to the north by the pressure of the collapsing structure.

Structure 3301 Eastern Arm

The eastern edge of the 3301 courtyard is enclosed by two abutting mounds, a northern segment, which occupies a footprint of approximately 6 x 20 m and containing Rooms 1, 2, and 3, and a southern segment measures 6 x 10 m that encompasses Room 4. The highest point of the eastern edge is at the intersection of these two segments and is elevated roughly 2 m above the contemporary surface level of the courtyard. This portion of Structure 3301 was extensively excavated in the 2012, 2013, and 2014 field seasons.

Eastern Courtyard Problematic Deposit

In 2012, suboperations 2-S and 2-U revealed an assemblage of artifacts embedded in a matrix with a high ash component adjacent to the north segment wall of the eastern arm of Structure 3301 (Figure 0.8) (Heller 2013). I designated this feature as Problematic Deposit 1 because of its similarity to other difficult to identify deposits variously interpreted to be either the product of ritual activity or waste deposition. Excavations in the 2013 and 2014 field seasons further exposed, documented, and collected materials from Problematic Deposit 1. This deposit was found to run from the southern edge of the Room 1 entrance to the front of the Room 2 entrance (Heller and Burns 2014; Heller et al. 2015). The northern portion of Problematic Deposit 1, located in suboperations 2-S, 2-U, and 2-Z, contained numerous broken ceramic vessels of utilitarian types, mainly water

jars from the Tepeu 2-3 period, a mano fragment, a metate fragment, a broken ground-bit biface, an alabaster spindle whorl fragment, and a small ground stone spherical object. In addition, the southern component of Problematic Deposit 1, located in suboperations 2-AY and 3-J, contained additional ceramic materials and a large, shaped chert stone with few inclusions measuring 57.5 cm x 44 cm. In addition, this excavation yielded piece of hematite, polished on a single side to red-tinted mirror-like finish. Furthermore, the fragment was slightly rounded on one side. These attributes suggest that it once was a component of a larger mosaic mirror (Figure 0.10). Samples of the matrix were collected in both the northern and southern areas of Problematic Deposit 1 and subjected to flotation. Flotation of these samples revealed the presence of carbonized plant remains, the analysis of which is ongoing.

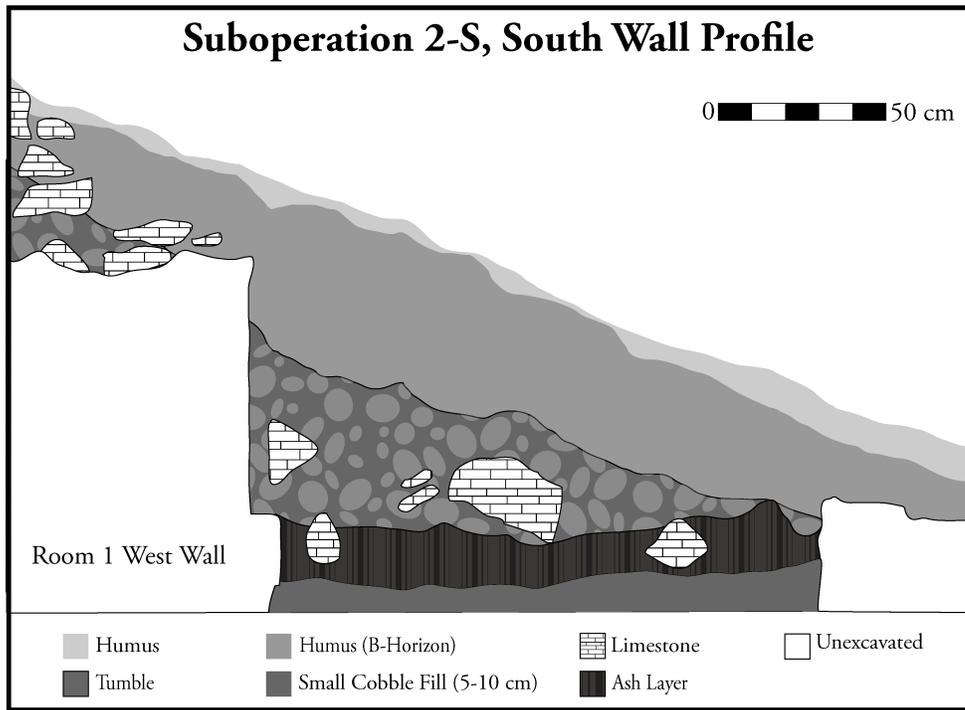


Figure 0.8: Suboperation 2-S South Wall Profile. Illustration by author.

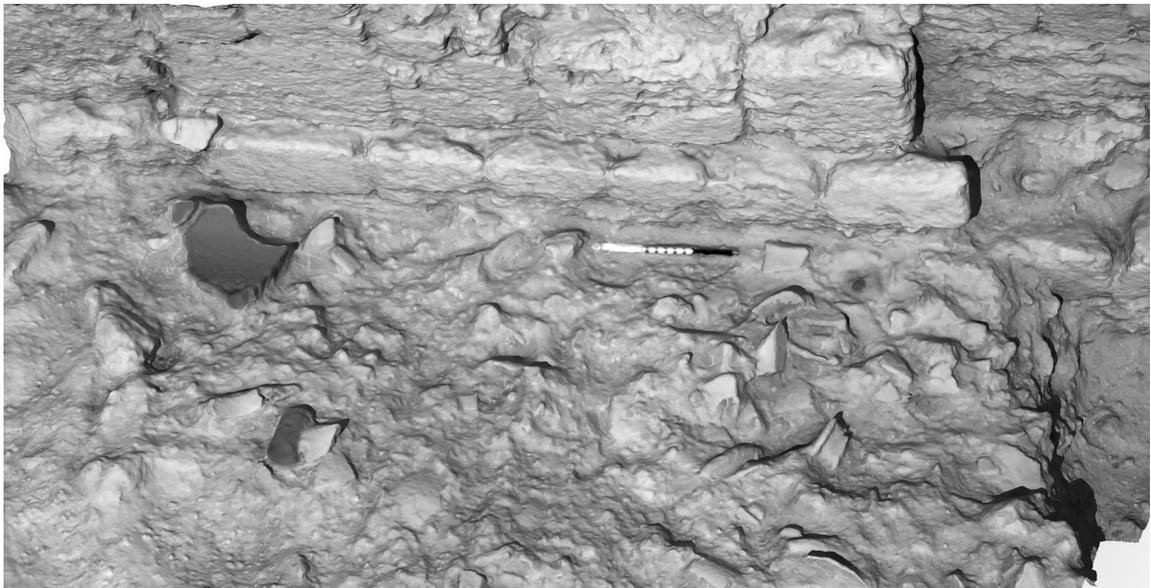


Figure 0.9: Orthographic view of Problematic Deposit 1. Ground stone artifacts are highlighted in dark grey to offset them from ceramic materials and matrix. Render by author.



Figure 0.10. Hematite Mirror Fragment. Photo by author.

Structure 3301 Eastern Arm Architecture

The eastern arm of Structure 3301 is comprised of a series of room blocks established by the use of 80 cm thick limestone masonry walls that once supported corbel vaulted ceilings. Excavations of this area began in the northern portion of Room 1 in 2013 and expanded to the north and south, until a four distinct rooms were excavated in full or in part by the close of the 2014 field season (Heller and Burns 2014; Heller et al. 2015).

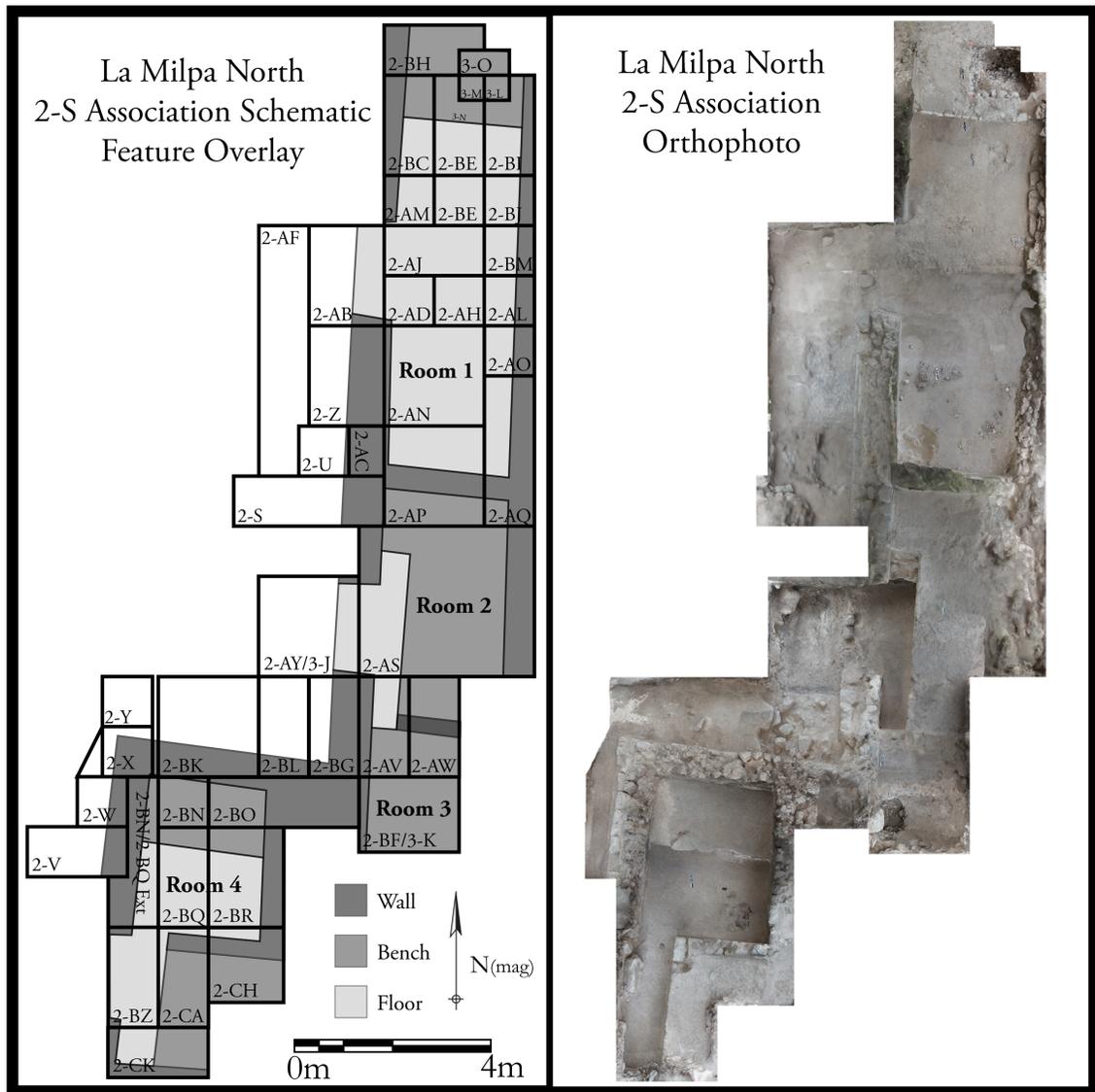


Figure 0.11. Left: 2-S association suboperation schematic overlay on an illustration of the main architectural features of Rooms 1, 2, 3, and 4. Right: Orthographic photo of the 2-S association including features and artifact assemblages. Illustration by author.

Room 1

Room 1 is a 2.4 m x 8.4 m space, oriented 6 degrees east of north (Figure 0.11). A doorway on the west side appears to be the only means of access into the interior. This doorway measures 1.8 m across on the interior side and 1.7 m across at the exterior of the

threshold and therefore has an angular design that widens towards the interior. Room 1's floor surface is plastered and well preserved, though evidence of weathering and at least one re-plastering episode is found around the doorway into the interior of the room. In addition, a thin layer of plaster covers the interior walls that remain standing on the western and southern sides of the room, which stand at a maximal height above the plastered surface of 91 cm and 136 cm respectively. The eastern and northern walls have completely collapsed to the east side of the structure and have likely tumbled down the steep slope of the Structure 3301 platform, leaving only a single course of displaced stones to mark their previous location.

In addition to plaster seams, evidence for a remodeling episode to achieve this final form of Room 1 can be found in an infilled doorway observable from the exterior of the western wall, which faces the courtyard and is directly adjacent to Problematic Deposit 1. The doorway spanned a distance of 1.36 m from its northern to southern jambs. When infilling the door, the architects of Room 1 took care to ensure this its visibility from the courtyard, inseting the filling stones by 10 cm from the exterior masonry of the structure. To complete the infilling, an 11 cm layer of construction fill was laid down before placing several courses of finely cut limestone blocks in the threshold.

Room 1, like all rooms excavated in Structure 3301, with the exception of Room 7, was enclosed by a corbel vaulted ceiling. Many vault stones were recovered from excavations within this context, identified by their rectangular shaping with the exception

of their proximal side, which is cut at an acute angle to create the shape of the vault interior (Figure 0.12). Interestingly, the larger vault stones have faces with higher angles while smaller and thinner vault stones have less steep angles. This configuration would have produced a more rounded or dome-like appearance to the ceiling (Figure 0.13). This pattern repeated throughout Structure 3301 in all rooms that were tested with the exception of Room 7, which was most likely covered by a perishable superstructure. Suboperation 2-AQ yielded evidence of at least a portion of the plaster of the ceiling having been painted with a red pigment, in the form of a painted plaster fragment located directly underneath a collapsed vault stone.

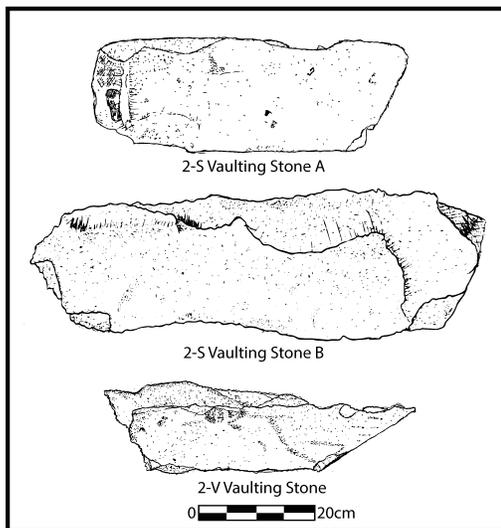


Figure 0.12. Vault stone examples from Structure 3301 Room 1. Note the progressively lower angles on the smaller and thinner vault stones. Illustration by author, based on original drawings by Adrian Smith.

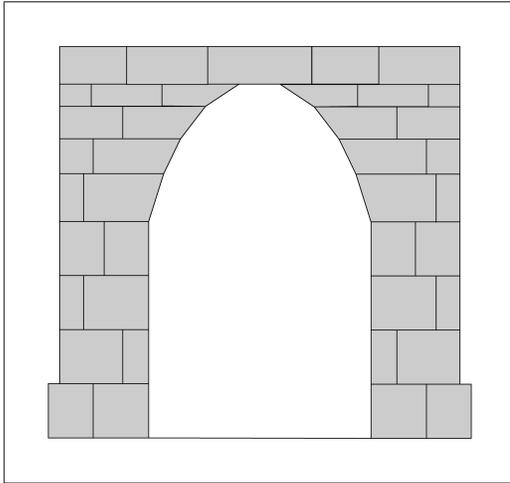


Figure 0.13. Hypothetical reconstruction of the vaulted architecture of Structure 3301. Not to scale. Illustration by author.

The northernmost portion of Room 1 is spanned by a bench, .53 m in height and approximately 2.4 x 1.35 m in length and width, though its exact east-west dimensions are difficult to determine, given the poor preservation of this feature's eastern and northern sides. The bench is covered by a layer of plaster, well preserved on the west side of the bench, but with progressively poorer preservation on the eastern side. A niche, created in part by a limestone lintel spanning two limestone masonry blocks is inset in the along the center line of the southern exterior of the bench and faces the interior of the room. The bench niche was excavated under suboperation 3-N, and matrix removed from the niche was screened using a 3 mm screen, but no artifacts were recovered from this context. The cut stones were found to continue into the interior of the niche with evidence of plaster remaining, most notably on the western interior. The plaster floor of the room flowed into the niche with seamless plaster slopes adjoining the masonry of the interior of the stones, suggesting the niche was constructed in the same episode as the bench and

floor. The shape of the niche was slightly rounded, narrowing slightly from the entrance through the interior and to the back. The floor level width was approximately .39 m while the uppermost width was .33 m. The height was .32 m, lending to a generally squared shape while affording the subtle rounded nuances in the upper corners. The interior eastern corner also has a light reddish tint, attributed to either pigment applied to the plaster or a possible burning episode within the niche (Heller et al. 2015).

The northeast corner of the Room 1 bench suffered heavy erosion and was therefore selected for further excavation under suboperations 3-L, 3-M, and 3-O as a means of exploring the construction of the bench while doing minimal damage to existing architecture. The matrix of the bench interior contained dense concentrations of red ochre, limonite, iron oxide, a high volume of various crystalline minerals, and fine-quality high-fired ceramics alongside the chert and limestone cobbles more commonly found in construction fill contexts at this site. A plaster floor was discovered, visible in the 3-L, 3-M, 3-O profiles, at the level of the Room 1 plaster floor (Figure 0.14). This suggests that the bench was built in a remodel episode that occurred after the initial construction of Room 1. A second plaster floor was discovered approximately 40cm below Floor 1. Floor 2 had distinctive pitting across the exposed extent, indicative of weathering. This suggests that it was previously an exterior courtyard floor, possibly the original surface of the Structure 3301 platform prior to its enclosure (Heller et al. 2015).

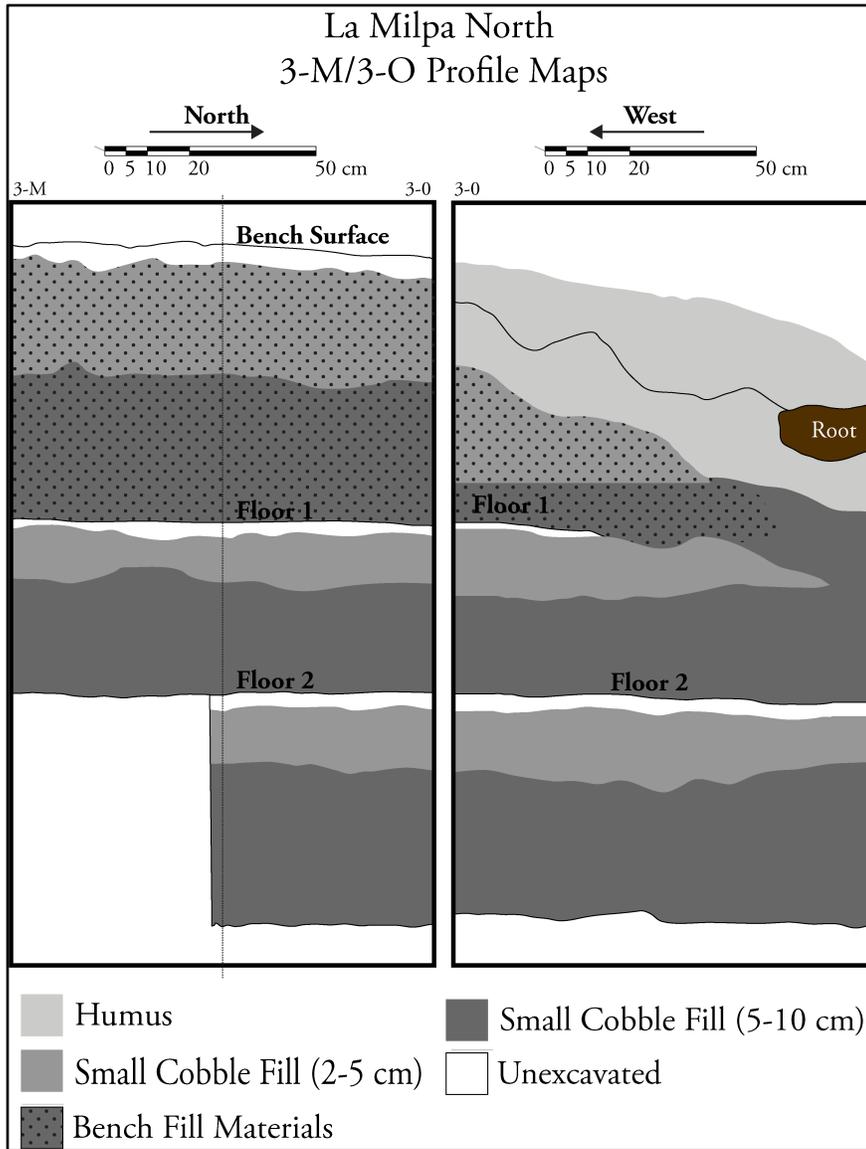


Figure 0.14. West and north wall profiles of suboperations 3-M and 3-O. Illustration by author.

A variety of artifacts were located in-situ on the plaster floor of Room 1. On the north side of the room, two partial ceramic plates, one of which fits the Scattered-Flints Coffin Gate Creek type of the Tepeu 2/3 period, and one which could not be identified due to a lack of surviving diagnostic features. In Suboperation 2-AM, excavations located a ground marble object suitable for use in the hand. It is interpreted to be a mano

fragment. The marble mano is roughly 9 cm x 5 cm, and has two perpendicular flat sides, while the third side is either broken or was left unmodified in the construction of the tool. The flat sides contain fine, regularly patterned angular scratches barely visible to the eye. This suggests that the tool was used for grinding a dense and hard mineral or other material that breaks into fine granules.

In the southern portion of Room 1, excavations yielded two distinct toolkits likely left in primary context prior to the abandonment of Structure 3301. These toolkits were associated with ceramic jars and clearly were contained within them until the collapse of the ceiling destroyed the vessels. The 2-AN-2/2-AO-1 toolkit, which was, at least in part, stored in a jar in Cayo Unslipped style, includes a relatively long and thin hammerstone with heavy step fracturing on the distal end, a flake tool scraper, three flake tool blades of various sizes, three drills ranging from a coarse and nearly exhausted drill to progressively sharper and finer drill bits, and one bifacially flaked tool fashioned from a distinctive purple chert that appears exhausted (Figure 0.15).

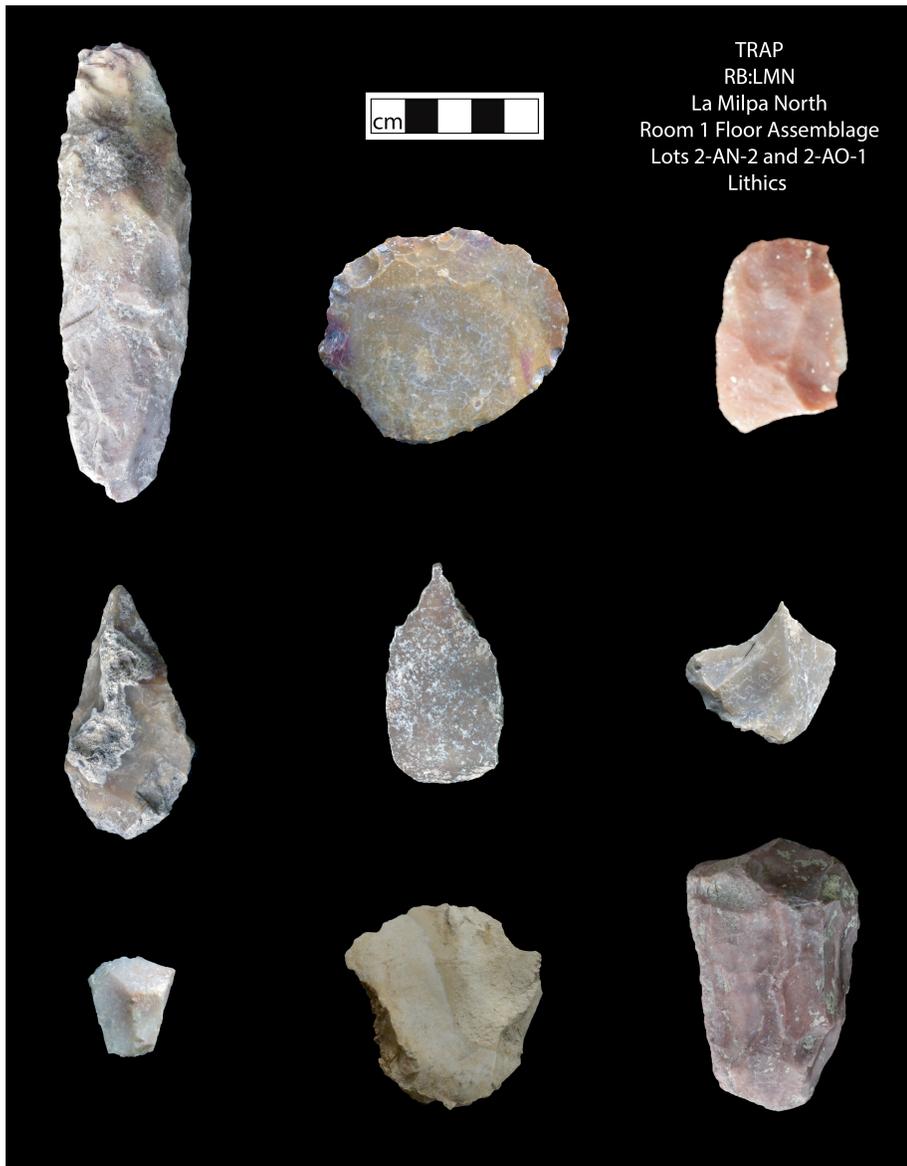


Figure 0.15. Room 1 South Floor Assemblage from lots 2-AN-2 and 2-AO-1. Top row: chert hammerstone, chert flake scraper, chert blade tool. Middle row: chert coarse drill, chert medium bit drill, chert fine bit drill. Bottom row: chert blade flake tool, purple chert bifacially flaked tool. Photos by author.

The 2-AP-2/2-AQ-2 toolkit assemblage consists of a chert and limestone nodule that contains an iron-oxide deposit on the surface of the limestone and a hand-held chert river cobble grind-stone that has evidence of small scale step fracturing as well as two reddish-surfaces polished to a glass-like consistency, likely from first chipping the iron

oxide deposit from the surface of the limestone-chert cobble and then grinding it into a fine dust. In addition, this floor assemblage contained three flake blade tools, including an extremely fine-edged small blade, and three bifacially flaked chert tools including two general utility bifaces and an oblong scraper (Figure 0.16).



Figure 0.16. Room 1 South Floor Assemblage from lots 2-AP-2 and 2-AQ-2: Top row, from left to right: Chert and limestone nodule with iron oxide deposit, hammer and grinding chert river cobble, flake blade. Middle row, from left to right: chert flake blade, fine chert flake blade, chert bifacially flaked tool. Bottom row: purple chert bifacially flaked tool, purple chert bifacially flaked scraper. Photos by author.

The 2-AN-2/2-AO-1 and 2-AP-2/2-AQ-2 toolkits were accompanied by two shell objects. These include a flower and stamen assembly that appears nearly complete and a shell platelet that appears unfinished. The flower has six distinctive petals and a long, delicate stamen piece, which fractured at the attachment point (Figure 0.17). These objects were located in close association with the toolkits described above.

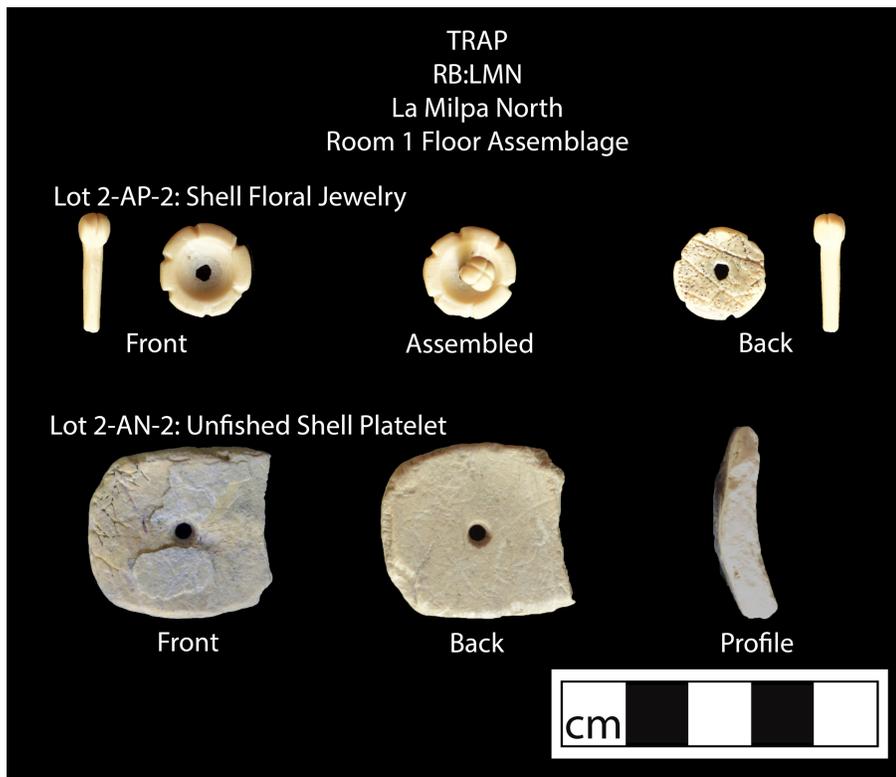


Figure 0.17. Shell objects located in the southern portion of Room 1. Photographs by author.

In the southwest corner of Room 1, a semi-circular cut in the plaster, with a maximum diameter of 72 cm, is located just behind the infilled original doorway. In addition, charring marks were present on the plaster around the northern edge of the hole and a thin horizon of ash was observed during excavation of the matrix just above the floor in suboperation 2-AP, increasing in density around the perforation through the

plaster floor. Suboperation 3-I was placed over the cut in the plaster to investigate this anomaly. The majority of excavated matrix and artifacts could not be distinguished from standard construction fill composed of discarded lithics, ceramics, and midden soils, but 3-I did yield a possible ceramic roller stamp fragment with an incised glyph design (Figure 0.18). It is unclear if this was deposited as part of the fill to create the structure or if it was once part of the cached objects that removed in the penetration into the floor of Room 1.



Figure 0.18. Possible roller stamp from suboperation 3-I-2. Photo by author.

Room 2

South of Room 1 and separated from it by a non-load-bearing dividing wall is Room 2, a 2.4 m x 4.5 m space dominated by a large bench (Figure 0.11) The bench fills almost the entire room with the exception of a .48 m x 3.41 m area of floor situated

behind the doorway. The bench sits 53 cm above the height of the Room 2 floor, which itself is 29 cm above the ancient Structure 3301 courtyard surface, as inferred from the construction fill layer. The doorway, which has a width of 1.5 m, is defined by jambs to the north and south. Plaster preservation in this space is excellent throughout the floor, though it suffered from light weathering, likely from water damage, which also observed on the walls. Room 2 also had a corbel vaulted ceiling, with progressively less steep facing angles to create a semi-domed appearance to the roof, which was supported by its 80 cm thick walls. Like Room 1, Room 2 may have also once had a painted ceiling, as a single plaster fragment with a red pigment applied were found underneath vault stones in suboperation 2-AS.

Room 2 yielded no artifacts whatsoever, indicating that the room was either kept clean or swept clean prior to the abandonment of the site. It is notable however, that the hematite mirror fragment and rounded chert nodule found at the southern edges of Problematic Deposit 1 were located in front of the doorway to Room 2.

Room 3

Room 3 is situated to the south of Room 2 and separated from it by a 24 cm thick non-load bearing wall (Figure 0.11) The only means of access to the room is a narrow doorway adjacent to the Room 2 entrance. The floor of Room 3 is 8 cm lower than the level of the Room 2 bench. The floor surface is plastered, and a seam in the plaster was observed, suggesting at least one modification to this interior space. The plaster on the remaining wall stones however, was largely stripped away by weathering. On the

southeastern edge of excavation units in this space, two pieces of polychrome painted plaster were observed and collected, include a red-orange fragment and a red fragment with a black line running through it, suggesting there may have once been a mural in this room.

Suboperation 2-BK, deployed specifically to explore this room, encountered an ashy matrix amid the upper levels of sub-floor construction fill. This anomaly prompted the use of a more exacting methodology leading to new suboperation 3-K, which encountered a 20 cm x 10 cm purple chert biface with a ground bit directly to the south of an 11 cm x 9 cm piece of red ocher and in close association of two obsidian blade fragments from two distinct tools. The biface showed obvious signs of use-wear, possibly of the type associated with shaping limestone.

Room 4

Room 4 lay directly west of Room 3, separated by two roughly 80 cm thick walls and a 45 cm thick area where rubble fill was placed between presumably existent walls to close the gap between the two structures (Figure 0.11). Room 4 has dimension of 2.27 m x 5.38 m and is divided into a northern and southern portion by a 26 cm non-load bearing wall. Both sections of this room contain benches. The north bench spans the extent of the northern segment with dimension of 2.27 m x 1.34 m with a height above the floor surface of 45 cm. It is elaborated by a slight overhang at the top of its face consisting of single course of stone that protrudes from the remainder of the face by 2 cm. The southern bench occupies the eastern extent of the southern segment with dimensions of

1.69 m x 2.09 m and a height above floor level of 49 cm. All features in the room show remains of having been plastered, with excellent preservation on most remaining surfaces. The only means of accessing Room 4 was through a doorway aligned to the northwest portion of the southern bench, measuring 1.48 m across.

Excavations located a scattering of lithic and ceramic artifacts on the floors and benches of Room 4, but the assemblage does not appear to represent a cohesive toolkit of any distinguishable kind. A single marine gastropod shell, 2 cm in diameter, was located atop the northern bench of Room 4. It is presently unidentified, but its small size and conical shape suggest it is most likely a species from the Solariellidae family, a group of mollusks with similar characteristics (see Vaught 1989). In addition, a jar base was firmly pressed against the floor adjacent to the southern wall of the room but was not in association with any additional ceramics materials. Finally, in 2015, a partial rim of a ceramic vessel was observed on the surface above Room 4 after the tree, which grew on the southern edge of the Room 4 excavations collapsed after a windstorm. Given its proximity to the doorway and its morphological characteristics, I interpret this to be a cordholder, used to secure a curtain that would be capable of closing off visual access to Room 4.

Structure 3301 Southern Arm

The southern extent of the 3301 courtyard is defined by a single structure mound approximately 23 m in length and 5 m in width (Figure 0.3). The eastern portion of this structure mound rises above the surface of the courtyard by approximately 1 meter. Its

relatively low elevation is likely due to a structural collapse in which a large volume of material fell to the south and subsequent erosion catalyzed by cow trample. XWAP has not conducted excavation operations in this portion of Structure 3301.

Structure 3301 Western Arm

The western edge of the Structure 3301 courtyard is demarcated by a 6 m x 8 m structure mound elevated 2.25 m above the surface of the courtyard (Figure 0.3). This structure continues along a north south axis to the Structure 3301 courtyard entryway.

Room 5

The mound that defines the western extents of the Structure 3301 courtyard contains Room 5, excavated by the 2-BP association in 2014 (Figure 0.3). Room 5 is a 2.38 m x 8.65 m space containing two benches. The northern bench is 2.38 m x 1.4 m with a height above floor level of 52 cm. and spans the northern portion of the room. The second bench in the center and southern portion of Room 5 is a large L-shaped bench. The southern portion of the L-shaped bench is 2.38 m x 2.30 m, and the northern part forming the L has dimensions of 1.01 m x 2.05 m. Both segments share a height of 51 cm above the plaster floor. The doorway into this room measures 1.06 m across. The northern doorjamb was damaged by the growth of a large tree, so it is unclear as to whether or not the doorway shared the angular shape that is found in the other doorways of Structure 3301.

The northern bench of Room 5 contained floor assemblage materials that may represent a specialized tool kit. Included in this assemblage is a granite mano, two

fragmentary granite metates, an assortment of chert blade and scraper tools, a biface that was repurposed to be an edge abrader or shaft straightener and scattering of assorted ceramic sherds of various types (Figure 0.19). The metates from this context were viewed under a low-power microscope and one was found to contain trace particles of reddish and orange materials in the crevices of the granite. The nature of these materials is not yet known, though it is possible that these particles may be iron oxide crystals ground into the metate or ground up ceramics to be used as a fine grog temper, a component of ceramic paste created from ground ceramic sherds. Interestingly, the larger of the two metate fragments refit with a fragment found in Problematic Deposit 1, and therefore once belonged to the same object. The remainder of this groundstone artifact was not recovered.

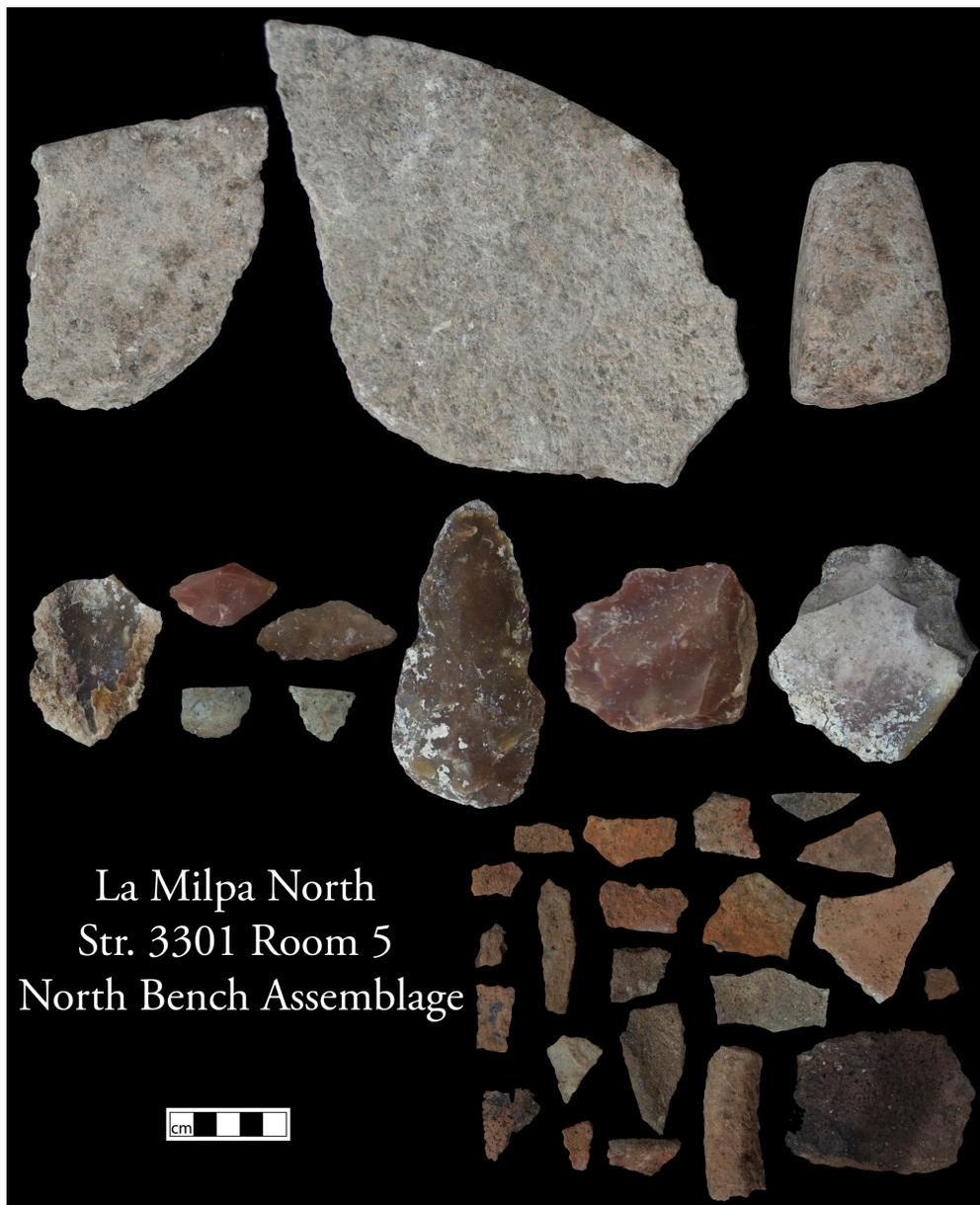


Figure 0.19. Artifacts recovered from the north bench in Room 5. Photographs by author.

Structure 3302

Structure 3302 consists of a courtyard, approximately 10 m in length and 7 m in width, surrounded by architectural mounds on all four sides forming a complex approximately 22 m along its east west-axis and 28 m along the north-south axis (Figure

0.3). Only the southeast corner of the structure remains open and unbuilt. The largest mound in the Structure 3302 complex is attached to the northwest corner of this group and has dimensions of 9.75 x 12.5 m and a height of 3.25 m above the surface of the Structure 3302 courtyard. The means of access into this courtyard is unclear, as the unbuilt area does not seem accessible. Access to this courtyard might have required movement through a yet-unrevealed interior space.

Suboperation 1-B, a 1x1 meter unit aligned to magnetic north, was placed slightly off center of the courtyard of Str. 2 in order to establish the stratigraphy, chronology, and construction phases of this courtyard. Suboperation 1-B was excavated to bedrock, 45 cm below surface, in two lots (Figure 0.20). The matrix in the first lot consisted of rich brown humus soils and larger shaped limestone blocks lying just beneath the surface level. In the second lot, the stones were removed, and a thin layer of dark brown soil was encountered between the stones and the bedrock below. Ceramic and lithic materials were encountered in all lots. All recovered ceramic materials have been dated to the Late Classic period. The Structure 3302 courtyard was leveled off in a single construction episode in the Late Classic period. The bedrock surface appears to slope downward from the northern to southern portions of the courtyard and the limestone blocks were likely placed in abutment to the bedrock to form a level surface (Heller 2011).

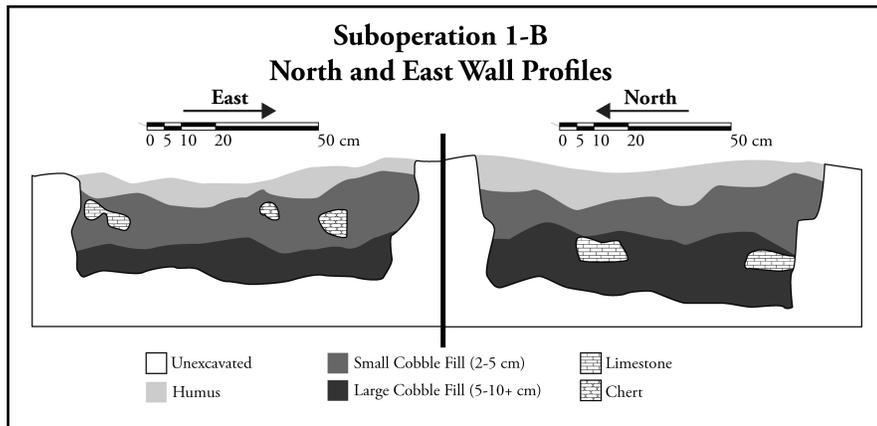


Figure 0.20. 1-B North and East Wall Profiles. Illustration by author.

Structure 3303

The largest structural group, situated in the center of the compound is designated Structure 3303 (Figure 0.2). In total, this structure group measures 75 x 40 m in length and width. It contains a series of interconnected mounds in an S-configuration that partially encloses two small plazas, each approximately 30 m across. Plaza A is Structure 3303's easternmost plaza, defined by an arrangement of structures along its eastern and western edges. The architecture along the northern edge had been demolished by a bulldozer, but a low rise remains to mark its former extents, which possibly spanned the entire distance between the eastern and western architectural arrangements. While the easternmost arm of the architecture which encloses this plaza is oriented roughly to true north, the central arm of the structure, which defines the western extent of Plaza A is oriented 14 degrees east of true north. Near center of both the central and eastern structure mounds that surround Plaza A are areas where the mounds are elevated. The central portion of the mounds flanking Plaza A to east and west are each 2 m above the

surface level of that plaza. The southern edge of Plaza A is left open and unbuilt. Instead, a 1.5 m incline remains. This incline is less steep to directly to the west of the Plaza A centerline and is therefore the most likely candidate for an access point into Plaza A.

XWAP investigated the architecture of the easternmost arm of Structure 3301 through two excavation associations, the 1-S association, which explored the exterior of this architectural feature and the 1-U, which tested the same feature from the Plaza A side. Suboperation 2-AA part of the 1-S association, captured a limestone masonry alignment consisting of three in-situ courses of stone running roughly north-south and revealed a packed-earth floor surface directly above a thin horizon of construction fill directly on top of the bedrock. The presence of a prepared surface in this location, as well as around Structure 3301 and 3306 (see below) suggests that much of La Milpa North's site core was once surfaced in this manner.

The architecture of this arm of Structure 3303 suffers from overall poor preservation, and excavations located only the bottom courses of stones in place. Nevertheless, when fully excavated, the profile of the 1-S association revealed that this portion of Structure 3303 is composed of three tiers ascending toward the top of the structure on its eastern side (Figure 0.21). Each individual tier is too large to be scaled without climbing, and therefore there was limited access to the top platform from this side of the complex. Ceramic data from the 1-S association indicate that Structure 3303 was most likely constructed in the Late Classic period, as construction fill contexts contained Tepeu 2 phase ceramics with some traces of the Early Classic Tzakol phase.



Figure 0.21. 1-S association orthographic photo. Note the 25 cm north arrow and scale in the bottom left of the image. Rendering by author.

The 1-U association captured the poorly preserved architecture of the western side of the platform on the eastern arm of this structure. Unfortunately, time and resources did not permit a more complete excavation of this area, but the association identified trace indicators of a limestone masonry staircase ascending to the top platform. Access to the tallest platform of Structure 3303 likely was not possible except by first entering Plaza A

from the south entrance and then ascending to the top of this arm of structure via staircase.

Suboperation 1-C, a 1x1 meter unit aligned to magnetic north, was placed within Plaza A in order to establish the stratigraphy, chronology, and construction phases of Plaza A (Figure 0.2). Suboperation 1-C was excavated to bedrock in four lots, of roughly 20 cm each. Lithic and ceramic materials were recovered in all lots. Ceramic seriation dating dated all recovered ceramic materials to the Tepeu 2-3 phase of the Late Classic. No evidence for multiple construction phases was present in the stratigraphy of 1-C. From the data collected from suboperation 1-C, it appears that, like other contexts throughout the site, Plaza A was likely elevated from bedrock in a single construction episode in the Late Classic period (Figure 0.22). In addition, it is apparent that the construction fill used by the builders of Structure 3303 is from a different source than that used in Structure 3301. Type-variety analysis of ceramics recovered from the construction fill contexts of 1-C were placed in the Tepeu 2 phase of the Late Classic.

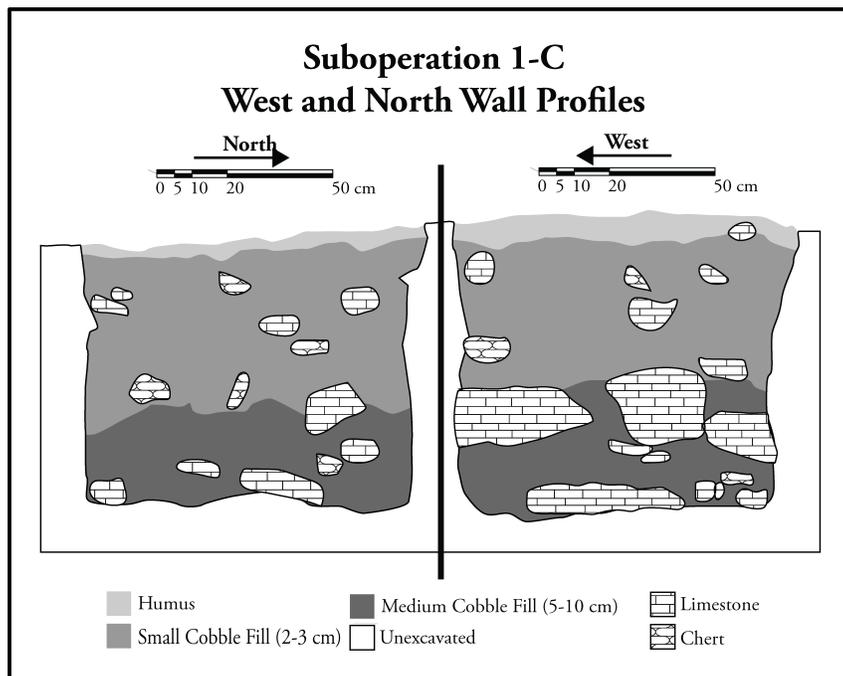


Figure 0.22: Suboperation 1-C West and North Wall Profile Maps. Illustration by author.

Plaza B, on the western side of Structure 3303 is in an inverse configuration to that of Plaza A and shares the 14 degrees east of true north orientation of the central arm of Structure 3301. The architectural arrangements there demark the western and eastern sides of Plaza B, while the southern side is likewise enclosed, save for a 2.5 m throughway. The northern side is left unbuilt and fully open with a low rise connecting this plaza to the open areas to the north of the La Milpa North architectural group. This plan likely allowed access to Plaza B through the constricted pathway on the eastern side of the southern edge as well as from the open northern side.

Suboperation 1-E demonstrates that Plaza B was elevated from bedrock by the application of progressively finer fill materials to create a level surface. First, builders placed medium cobble fill to rapidly elevate the plaza, followed by a finer cobble fill

more suitable for leveling the final surface (Figure 0.23). Like other excavations in Structure 3303, all construction fill ceramics dated firmly to the Tepeu 2 phase.

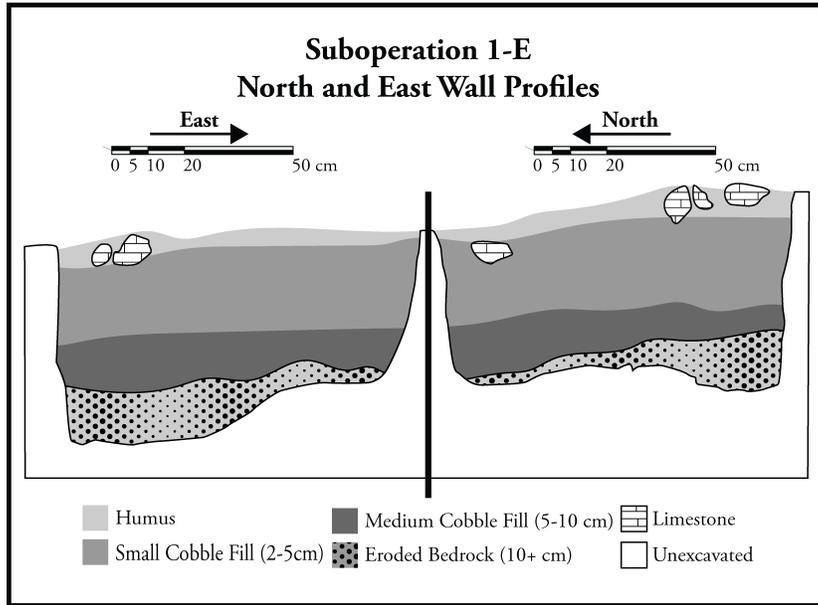


Figure 0.23. Suboperation 1-E north and east wall profiles. Illustration by author.

The southern arm of Plaza B is comprised of a 22 m x 8 m mound, oriented 110 degrees east of north (Figure 0.2). The mound has three distinct rises spaced across this span, likely indicating the presence of three rooms placed on the apex of its platform. Suboperations 2-A through 2-D were placed at the centerline of this portion of Structure 3303 to gain an understanding of the form of the architecture at this location. Excavations encountered a series of low limestone masonry platforms leading to the top of the mound (Figure 0.24).

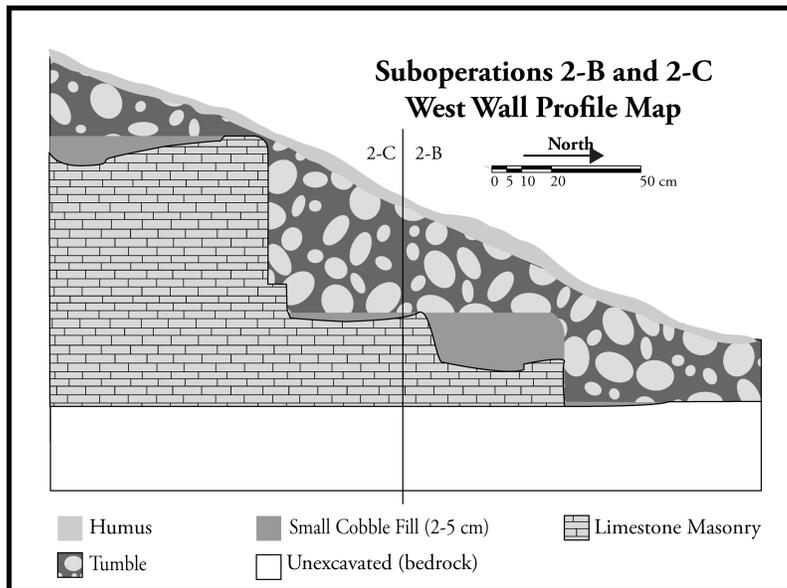


Figure 0.24. Suboperation 2-B and 2-C west wall profile maps. Illustration by author.

Two structures placed on an elevated platform are attached to the south side of the western portion of Structure 3303. Vault stones were located on the surface of the existent mounds, indicating that these mounds contained corbel vaulted interior spaces. The westernmost mound in this group measures 5.0 x 8.5 m, and is offset from the southern edge of the southern mound of Plaza B by 4.75 m. The eastern arm of this group however, has a footprint of 5.25 m by 10.25 m and appears to nearly abut the remainder of 3303 on its north side. Suboperation 1-F investigated this portion of Structure 3303 (Figure 0.25). It found a layer of small cobble construction fill just below a thin horizon of humus layer. All ceramic materials from the construction fill contexts were from the Tepeu 2/3 period. This suggests a slightly later construction date than either Plaza A or Plaza B, with the possibility that this portion of Structure 3303 was a subsequent addition.

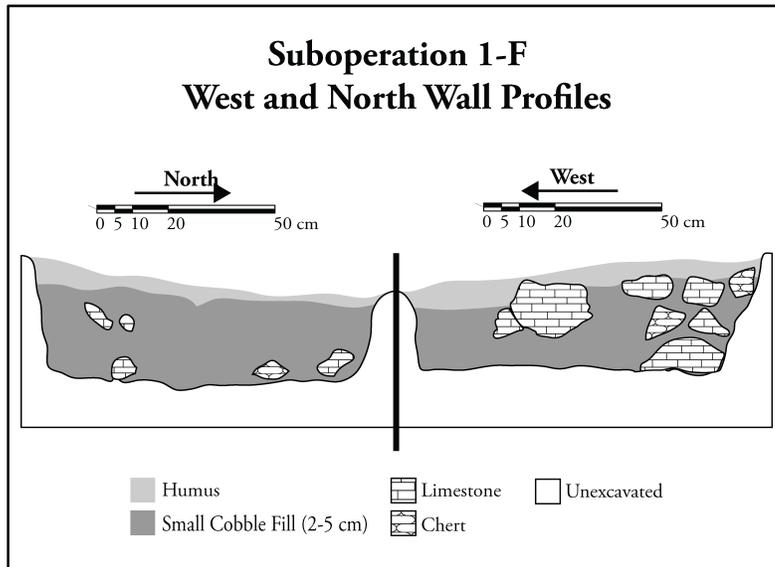


Figure 0.25. Suboperation 1-F west and north wall profiles. Illustration by author.

Researchers affiliated with the La Milpa Archaeological Project (LaMAP) conducted limited excavations on the centerline architectural arrangements and located a doorway and an interior plastered surface in a 2x1 meter excavation unit placed so that the northeast corner of the excavation unit was on the centerline of the highest point of Structure 3303 central arm (Tourtellot, Pers. Comm. 2014). Within this excavation unit, LaMAP researchers uncovered a plaster floor which lay immediately behind an entryway. The elevation of this floor strongly suggests additional architectural features, likely a staircase leading to the doorway, to the west of their excavation unit.

The western arm of Structure 3303 extends from the western edge of the southern arm and measures 6 m x 27 m, oriented 16 degrees east of true north (Figure 0.2). The maximal height of this arm of 3303 above the present surface of Plaza B is approximately

2 m. This arm confers a trapezoidal shape to Plaza B, which widens at its southern edge. Preservation is very poor on the northern end of the western arm.

Structure 3304

Structure 3304 sits at the southeast corner of the La Milpa North complex and occupies a footprint of 25 x 20 m (Figure 0.2). The mounds of Structure 3304 share a consistent orientation of 7 degrees east of true north. A small courtyard, roughly 7 m x 9.5 m is defined by abutting structure mounds to the east, south, and west, and is semi-enclosed on its northern side as well. The eastern arm of Structure 3304 is formed by an 8.5 m x 20 m structure mound with a maximum elevation above courtyard level of 2.75 m on its southern side. Exposed limestone masonry blocks were observed in place on the eastern exterior of this portion the structure. The southern portion of Structure 3304 is formed by a structure mound that abuts the southwest of the eastern mound and measures 9.75 x 6.75 m. A 6 m x 11.5 m structure mound forms the western extent of the structure group. A 5.75 m x 4 m mound with a height of approximately .5 m lay at the northern edge of the courtyard, and defines a narrow access point into the courtyard, 1.5 m across.

Suboperation 1-G was placed in the courtyard of Structure 3304 in order to establish the chronology and construction history of this building (Figure 0.26). A highly eroded plaster surface was revealed under the humus layers, followed by small and medium cobble fill horizons. An unusually dense concentration of large limestone rubble was located just above bedrock. All ceramic materials from construction fill contexts in

this unit date to the Tepeu 2 period, making the erection of this platform contemporaneous with other such platforms throughout the core of La Milpa North.

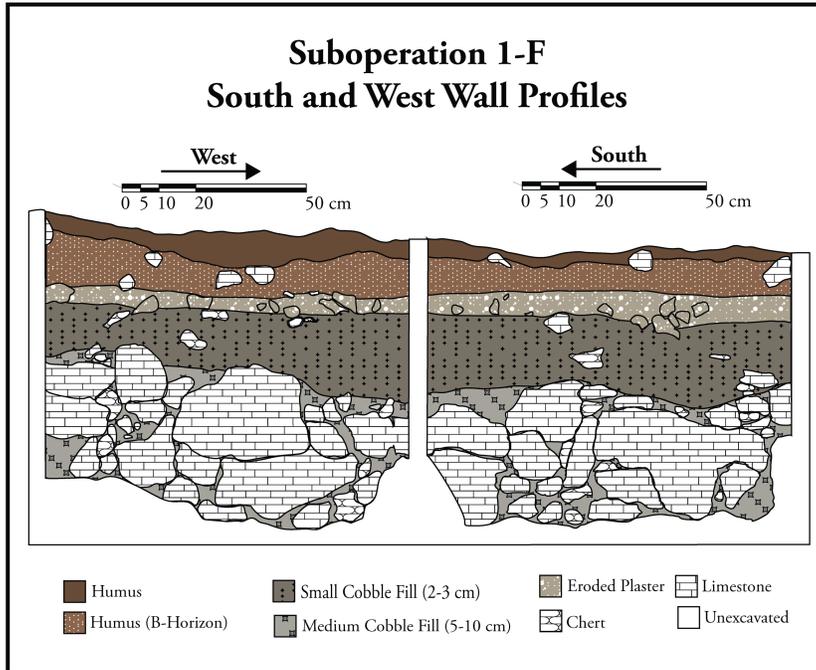


Figure 0.26. Suboperation 1-G south and west wall profiles. Illustration by author.

Structure 3305

Structure 3305 occupies the northwestern most area of the La Milpa North complex (Figure 0.2). Oriented 8 degrees east of true north, this structure group consists of four mounds, with an overall footprint of 16 m x 18.5 m. These abutting structure mounds form a courtyard approximately 4.75 m in length x 7.75 m in width. These mounds are relatively low-lying, with the north and southern arms not achieving more than 1.25 m in height above the Structure 3305 courtyard surface and the eastern and western mounds laying no more than 2 m above surface levels. The structure mounds are fairly uniform, and it is difficult to distinguish one individual structure from another in

this group in the absence of excavation data. The shape of the overall mound suggests a possible entryway into the courtyard of approximately 1 meter on the northwestern corner of the structure group. Suboperation 1-H excavated near the center mass of the Structure 3305 courtyard. The construction fill layer contained ceramic materials that belong to the Tepeu 2 period, and therefore indicate that the construction of this structure occurred contemporaneously with the other elevated courtyards and plazas of La Milpa North.

Structure 3306

Structure 3306 is a low-lying mound, rising at its maximum 0.75 m above the adjacent contemporary surface level, situated between Structures 3301 and 3303, and is directly south of Stela 22 (Figure 0.2). Structure 3306 occupies a 5.25 m x 8.5 m footprint, and there was no indication of vaulted masonry architecture on the surface. Unlike all other structures in the La Milpa North complex, it does not enclose a plaza or courtyard, and was therefore immediately recognized as an anomaly amidst the much larger and more complex architectural arrangements situated on the apex of the La Milpa North hilltop.

In 2010, suboperation 1-D, placed to the west of the northern portion of Structure 3306 encountered a series of damaged and eroded limestone blocks running roughly from the center of the unit and into the south wall profile, representing a modified patio directly west of the architecture of this structure. In addition to lithic and ceramic materials many other objects were recovered in the matrix excavated from around the

possible limestone platform of Structure 3306. These include microliths, marine shell, four obsidian blade fragments, a possible unfinished or repurposed hematite object, and approximately 1 cm in diameter pieces of red and yellow ochre. All recovered ceramic materials from lower elevations within the unit were dated to the Tepeu 2 phase of the Late Classic, while the upper lot contained Tepeu 2/3 materials (Heller and Burns 2014).

In 2013, XWAP deployed the 1-V association to further explore the architecture of Structure 3306. 1-V yielded several notable artifacts, including chert flake tools, a chert celt roughly 12 cm in length and 6 cm in width, and four fragmental pieces of a single obsidian blade, including both its proximal and distal ends. In addition, 2-AR yielded a ceramic disk with perforation spindle whorl and a broken alabaster spindle whorl (Figure 0.27).

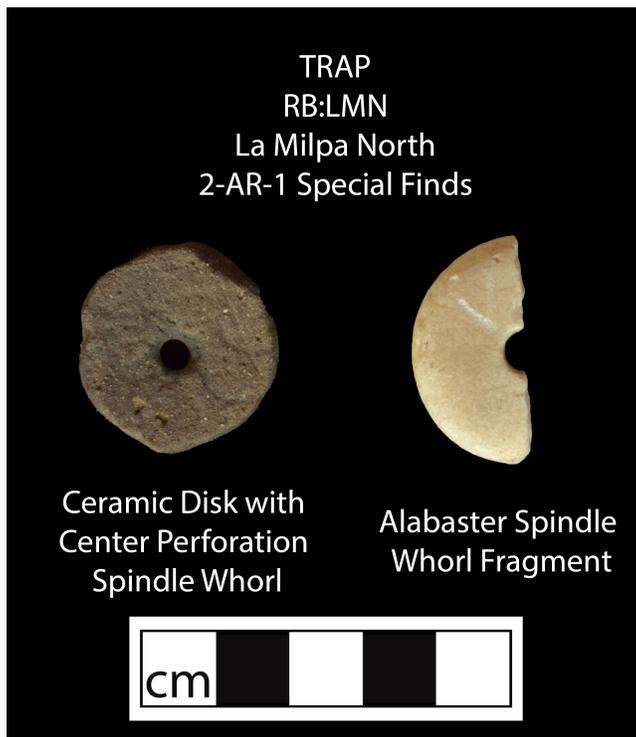


Figure 0.27. Spindle whorls from 2-AR. Photographs by author.

Suboperations 2-AR and 2-BB yielded evidence of construction fill having been used to fill the natural depressions within the limestone bedrock topped with and a dark layer of compact soil above the fill, indicative of an earthen floor, placed to create a uniform surface. Excavators also exposed exterior and 50 cm thick interior walls in the 1-V association, as well as a plaster floor within the interior of the structure, in 2-AX, 2-AZ, and 2-BA (Figure 0.28). The architects of this structure utilized the natural acclivity of the bedrock, capped with a dirt surface, and thereby rendered the elevated platform that encompasses the exterior walls of Structure 3306 accessible from the northern side while establishing a narrow patio directly adjacent to the structures walls on at least the northern and western sides. The walls of Structure 3306 are too narrow to have supported

a vaulted ceiling, so it is likely that the masonry alignments of the Structure supported a perishable superstructure.

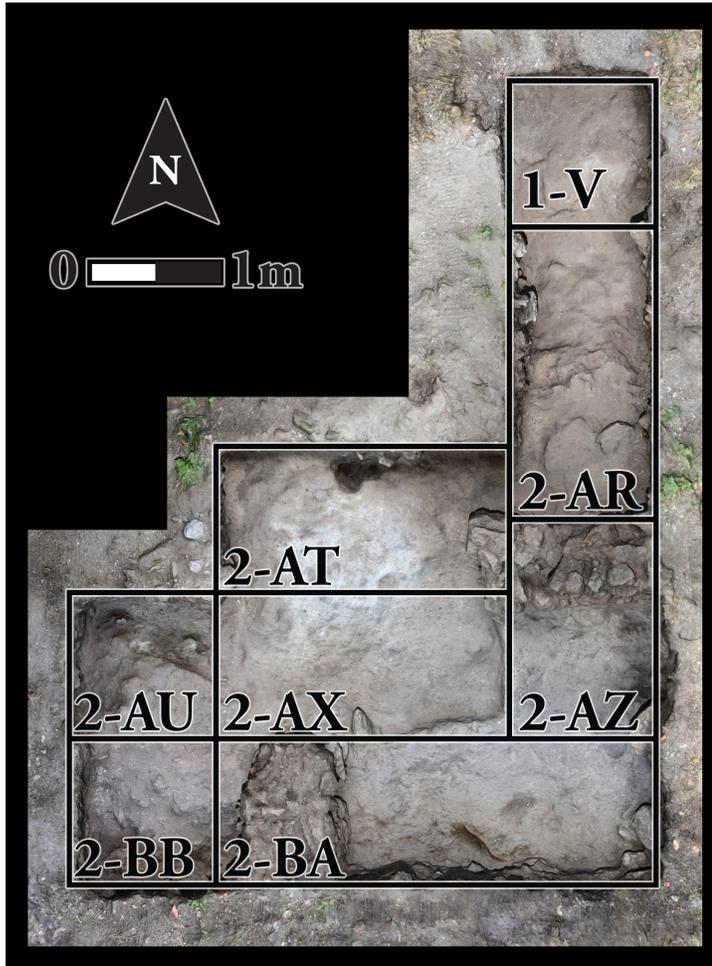


Figure 0.28. Orthographic photo with association 1-V association schematic overlay. Render by author.

Stela 22

North of Structure 3306 and between Structures 3301 and 3303 lay a celtiform limestone slab, measuring 85 x 150 cm (Figure 0.29). Cracked and lying broad-face down, this feature was located in 2010 and excavated in 2011 to verify that it was in fact a monument. Excavations located the base of the stela and determined that the stela was

placed into a form-fit cut in the limestone bedrock without further modifications to the surface of the bedrock. Construction fill containing exclusively Tepeu 2 ceramics was used to infill a 25 cm gap between the hard bedrock near the surface and the softer limestone bedrock beneath. It is likely that in the Late Classic period, any topsoil around the stela setting was removed and the bedrock was left exposed, creating a large area of exposed limestone in which the monument was directly placed. The presence of Tepeu 2 ceramics in the fill suggests erection of the stela in the same period as the construction of all the platforms of La Milpa North's core architecture (Hammond et al. 2014; Heller 2012).

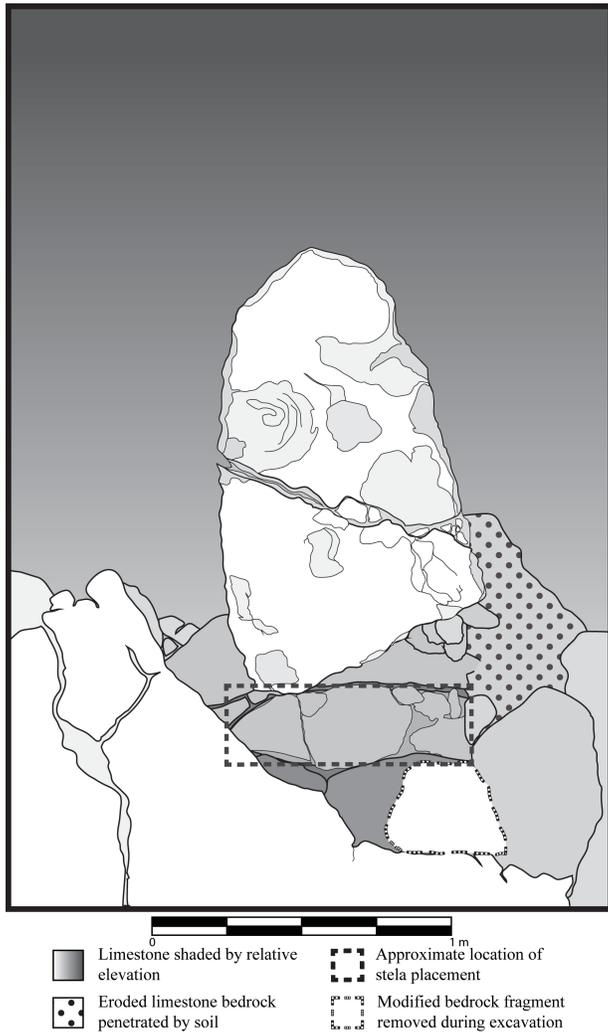


Figure 0.29. Plan map of Stela 22. Lighter tones indicate higher elevation. Illustration by author.

Additional La Milpa North Structures

Several structures in the immediate vicinity of La Milpa North are ostensibly related to the form and function of the core structures located and mapped by Tourtellot and colleagues (2000). This determination is based on both the proximity of these structures, their size and construction methods, their placement on modified segments of the La Milpa North hill, or any combination of the aforementioned factors.

Structure 3307

Structure 3307 is a C-shaped structure placed directly north of Structure 3305 (Figure 0.2). This structure is situated on a platform elevated from the ground by .25 m and comprises a 23.5 m x 7 m span to the north, and a 7 m x 6 m portion on the western side. The northern portion of the structure is approximately 2.25 m tall, while the western portion is 1.25 m in elevation at its central point. The eastern arm of Structure 3307 occupies a 4.0 m x 6.5 m area. The northern side of this structure was damaged during the construction of an access road that runs east-west through the property, revealing materials consistent with the construction fill used in the interiors of limestone masonry walls observed elsewhere within La Milpa North's core group. Similar construction methods and architectural style suggest that Structure 3307 may be closely related to or a part of the core group.

Structure 3308

To the south of Structure 3303 Plaza A sits a rectangular platform that extends out from the apex of the La Milpa North hilltop (Figure 0.2). A 7 x 14.5 m mound, likely a base for a perishable superstructure or an open platform in itself, defines the western edge of the lower platform. The platform is elevated 2.25 m above the slope at its southern extents, while the mound atop the platform is elevated an additional .75 m above the basal platform surface. The proximity of this structure to Structure 3303 Plaza A warrants its inclusion in the overall La Milpa North architectural complex.

Northern Platform

A 90 x 90 m leveled surface was placed to north of Structures 3301, 3303, and 3306 (Figure 0.2). After this feature was identified, excavations in this area revealed that the natural rise in the hill on which La Milpa North is situated was leveled off using construction fill materials composed of repurposed household rubbish, chert cobbles, and limestone cobbles. This large platform is nearly indistinguishable from the natural surface levels on its south, east, and north sides, but is apparently identified from its west side, in which the natural elevation of the ground begins to slope sharply downwards. Three structures were placed in this area including Structures 3309, 3310, and 3311, and one platform structure was placed on the edge of the slope that defines the western side of this large platform. These structures are included in my definition of the core La Milpa North group because of their size, construction style, and proximity to the largest and most intricate structures of the hilltop.

Structure 3309

Structure 3309 is a large L-shaped mound placed upon with an east west arm that runs 16.5 x 6 m (Figure 0.2). A southern arm was placed directly adjacent to the west side of the south face of the east west arm and has the dimensions of 6 x 5.5 m. This structure mound measures approximately 2.5 m from the platform on which it was built. Itself raised .3 m from the surface level of the northern platform. Although no vault stones were observed on the surface of this mound, I believe that this is a vaulted masonry

structure in which the ceiling collapsed inwards and braced the walls from further erosion. While excavations have tested areas immediately to the west of this structure and the platform on which it was built, none have taken place on the interior of this mound. Therefore, these assertions are speculative, and based only on my experience with other structures at the site.

Structure 3310

Place to the northeast of 3309, Structure 3310 was likely once in a similar configuration to 3309, though with a significantly different orientation (Figure 0.2). This mound displays relatively poor preservation compared to 3309 and has a maximal height of only 1 meter above the Northern Platform surface. This L-shaped mound runs 22 m north to south and 12 m east to west.

Structure 3311

Structure 3311 is a roughly square mound with a maximal height of 1 meter above the surface level measuring 7.25 x 7.5 m (Figure 0.2). This mound is too small to contain the remains of a residence, and unlike all previously discussed structures, no cut stones were observed here. Rather this mound is composed entirely of limestone and chert cobbles. Given this information, it is possible that Structure 3311 was a platform that was either left unbuilt or supported a perishable superstructure.

Structure 3312

Structure 3312 is a platform that abuts the base of the northern half of the western side of the Northern Platform (Figure 0.2). This platform measures 24 x 18.5 m and is built up from the natural ground surface approximately 0.5 m by using primarily limestone and chert cobbles, visible from the surface.

Xaman Witz

The remainder of the potentially architectural mounds comprise the site of Xaman Witz, arbitrarily defined as the mounds within the research area of this project, a 1 x 1 km area centered on the site of La Milpa North (Figure 0.30). A principle goal of the XWAP is to better understand the function of La Milpa North on the regional social landscapes. Therefore, as part of its core research design, this project attempts to establish the social contexts and frameworks in La Milpa North that operated at multiple scales, including that of its immediate environs.

XWAP surveyed Xaman Witz using pedestrian and aerial surveys. The Xaman Witz site map includes mounds that are probable structures, validated not only by their quadrangular shapes, and therefore outstanding appearance on the landscape, but also by the presence of artifacts, primarily lithic and ceramic materials, intermixed with chert and limestone cobbles, a pattern consistent with construction fill used by the ancient Maya to build structures. Please note that limitations in time and resources did not permit testing of any of the structures within wider Xaman Witz, and therefore this map represents only mounds believed be structural, based on the aforementioned criteria. Therefore, this map may both omit structures that could not be readily observed as well as include features

marked as structures that are in fact generated from other sources, for example by modern anthropogenic or natural processes, and should be considered provisional in the absence of further research.

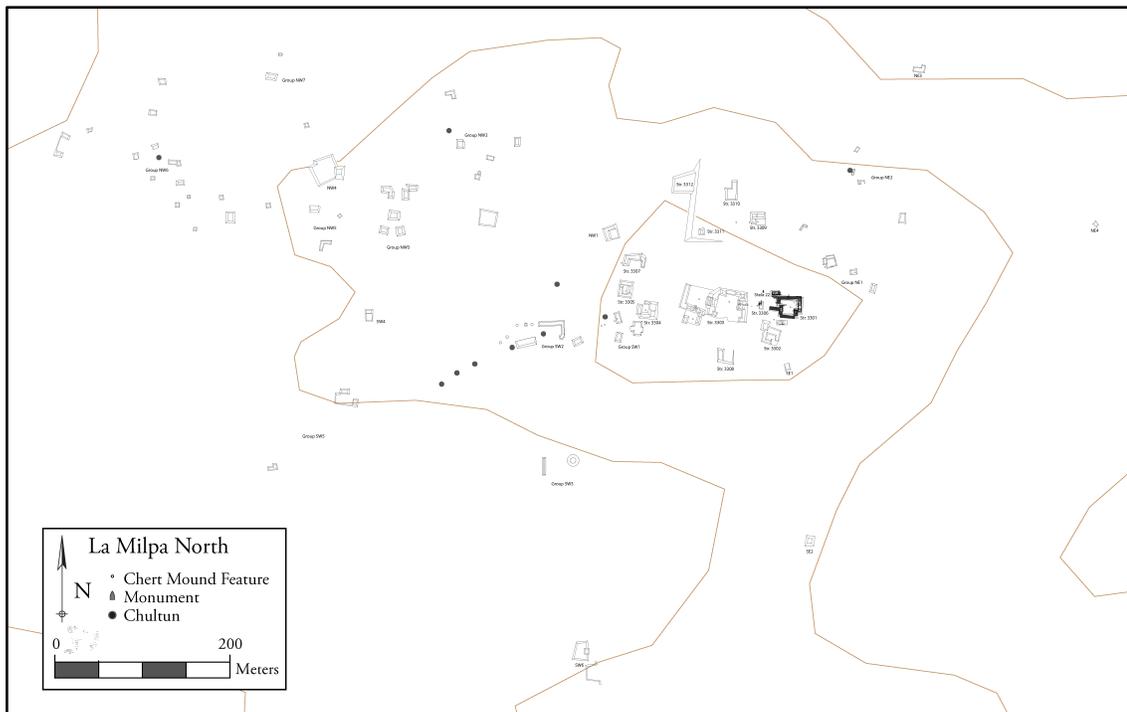


Figure 0.30: The Xaman Witz Archaeological Project research area. Illustration by author.

Northeast Quadrant

The Northeast Quadrant of Xaman Witz consists of a series of possible terraces arrayed down the slope of the La Milpa North hill to the north, toward the Dumbbell Bajo, and a gentle declivity to the east (Figure 0.31). XWAP located 10 possible structure mounds in this quadrant, arbitrarily divided into four clusters of structures or groups.

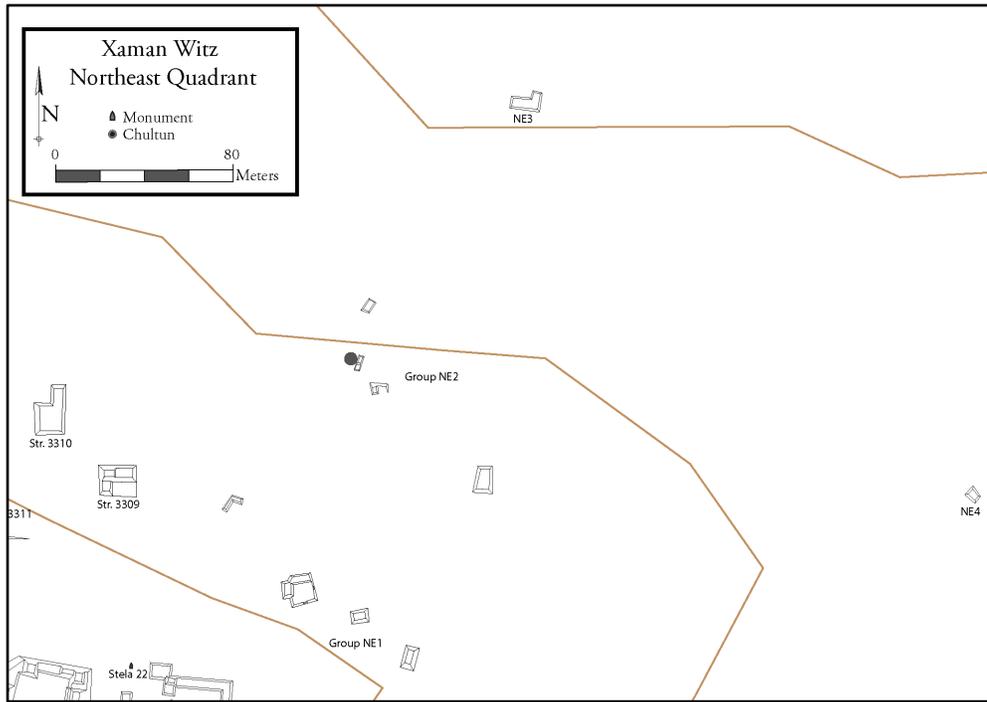


Figure 0.31. Northeast Quadrant of Xaman Witz. Illustration by author.

Group NE 1 consists of four structures placed to the northeast of Structure 3301. Of these, an L-shaped structure placed upon a platform is the most prominent, occupying an overall footprint of 16.75 m x 15.25 m. Suboperation 1-Q located a midden directly adjacent to the west of this platform and recovered ceramic materials from the Late to Terminal Classic periods (Tepeu 2 and Tepeu 2/3) beneath a layer of collapsed limestone blocks. To the southeast of this structure are two additional mounds placed atop the natural declivities in this portion of the site. Though much smaller, these mounds contained a high-density of artifacts on their surface and therefore are considered to be structural with a significant degree of certainty. The last feature in this group, situated to the northwest of the L-shaped structure of NE1, is a narrow L-shaped feature of unknown function.

Group NE2 is an array of four features and a chultun, a cavity excavated into the limestone bedrock. This group is placed in an area where the slope of the La Milpa North hill is significantly canted toward the Dumbbell Bajo. The NE2 chultun, though not formally investigated, was observed to run directly beneath a platform-style mound with two distinct levels. To the southeast of this mound is a 5.25 m x 8 m platform protruding from the natural slope of the hillside with an elevated mound on its western side.

Two additional possible structures were found in this quadrant and appear today to be well-removed from other features, though this may be a result of the sampling bias produced by aggressive land clearance practices. Structure NE3 is an L-shaped structure placed at the base of the La Milpa North hilltop, where the possible terraces on this slope appear to terminate. This structure occupies a total footprint of 15 m x 9 m. NE4 is the easternmost possible structure mound located by this project. This 8.75 m x 6.5 m mound with was in poor condition overall, but nevertheless was interpreted to be structural because of its apparent composition based on observations of its surface.

Southeast Quadrant

The landscape Southeast Quadrant of Xaman Witz is largely empty of identifiable features (Figure 0.31). This section of the property on which this site is located appears to have been aggressively cleared using tractors and chains. Therefore, it is likely that a number of structures were once placed here but are no longer readily observable. The remaining mounds which appear to have been ancient structures include SE1, a 5.25 m x 7 m platform built into the southeastern hillside on which La Milpa North is located and

SE2, a 9.5 m x 11.25 m mound placed 255 m directly south of the easternmost edge of Structure 3301 (Figure 0.32). SE 1 may have some direct relationship with the La Milpa North group given its close proximity, but SE2 appears to be a typical domestic style mound, though this has not been verified through excavation. In addition, chert veins can be observed in the exposed bedrock outcroppings of this quadrant.

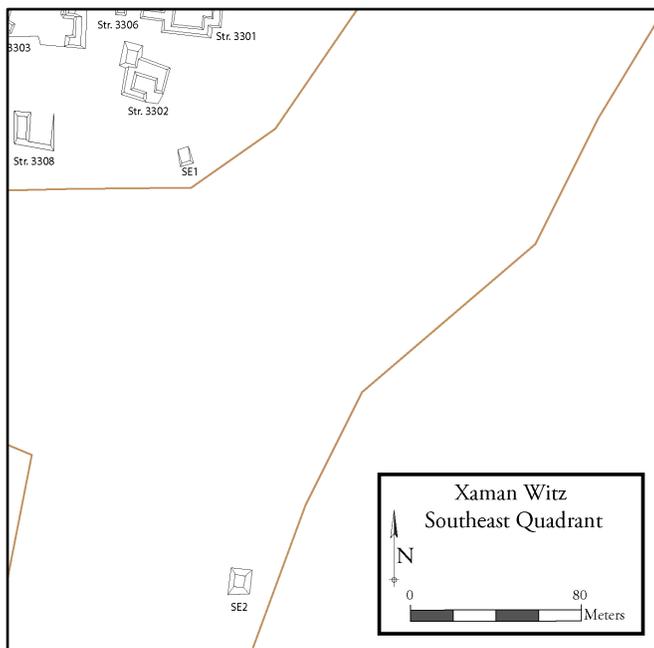


Figure 0.32. Xaman Witz Southeast Quadrant. Illustration by author.

Northwest Quadrant

The Northwest Quadrant is the most feature-rich quadrant of Xaman Witz (Figure 0.33). This portion of the site was deforested and cleared, in stages, between the 2011 and 2014 seasons of XWAP. Though burned and bulldozed, this area of the site was not subject to chaining, which spared many smaller archaeological features. XWAP divides

this portion of Xaman Witz arbitrarily into five main groups of possible architectural mounds labeled NW2, NW3, NW5, NW6 and NW7 and three possible structures, excluded from the above groups.

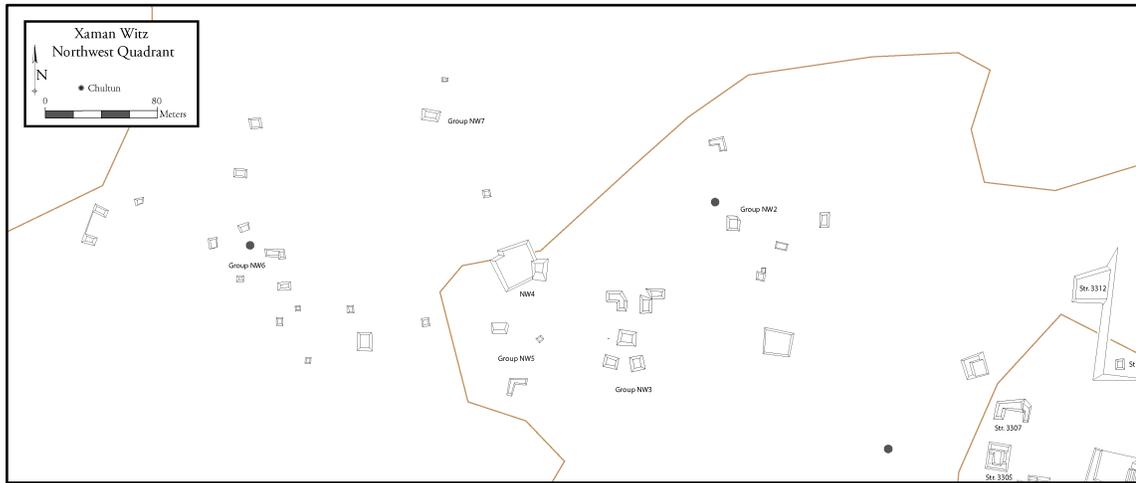


Figure 0.33. Xaman Witz Northwest Quadrant. Illustration by author.

Structure NW1 is an L-shaped structure, 11 m northwest of Structure 3307, situated on a 15 m x 15 m platform with a height of 30 cm, oriented to the northwest. The shape and composition of the mound provides a high degree of confidence that mound contains the ruins of a domestic structure. As surveyors did not locate vault stones on its surface, NW1 was excluded from the La Milpa North group of structures due to a probable difference in architectural style, though it is possible that this mound was once in fact related to the function of La Milpa North.

West of Structure NW1 and north of the chultun located in the southeastern portion of this quadrant is a large oval shaped depression with bedrock overhanging on its southern side. This space is likely a limestone rock quarry as it was clear from surface observation that a significant portion of the soft limestone under the harder limestone

surface had been removed, causing a collapse of the surface on that side. XWAP placed a shovel test pit in the center of the depression to determine if it had been used as a water feature. No indications of a sealing treatment, such as a plaster or clay surfacing, were found.

Group NW2 is a series of five possible domestic structures situated in proximity to a chultun. In addition, Group NW2 is located to the north of a 20 m x 20 m square platform oriented 4 degrees east of north.

Group NW3 is a collection of large structure mounds heavily damaged by bulldozer strikes, treefall, and burning. While the damage done by land clearance to this group is significant, it appears that this group consists of a series of corbel vaulted structures placed on platforms, including an L-shaped structure to the northwest with a footprint of 15 m x 14.5 m, an L-shaped structure to the northeast arranged as mirrored reflection of the previously described structure with a footprint of 18.5 m x 18 m, a 14 m x 10.75 m square mound in the center, a 10 m x 8 m mound to the southwest, and 10.75 m x 10.5 m mound in the southeastern part of the group. The mounds stand 2.25 m tall on average, differentiating them significantly from other mounds in this quadrant.

NW4 is a 10.25 m x 15 m mound attached to the eastern side of a 29.5 m x 31.25 m platform. The platform has a maximal height above surface level of 70 cm while the mound itself is 1.75 m above the surface of the possible platform. A slope on the western side of the northern edge of the platform suggests a possible means of access to this space. South of NW4 are three possible structures belonging to group NW5. These

include a 12 m x 7.5 m possible platform built into the side of a south facing slope in this area, a 5 m x 5 m square mound and an L-shaped structure occupying an overall footprint of 14.5 m x 14.75 m. To the northwest of the NW4 platform are situated three additional possible structure mounds, which comprise Group NW7.

Group NW6 is a series of 15 mounds arrayed around a central chultun. These mounds are some of the most diminutive observed within Xaman Witz, having survived the relatively gentle land clearance methods used in this area. NW6 mounds have an average height of approximately 40 cm above the ground surface. Notably, the structure located farthest to the west is a platform protruding westward from the low slope that declines from east to west in this area, 30 m north to south, on which two approximately 6 m x 10 m mounds are located. Many of the NW6 mounds appear residential, though a few of them are less than 5 m x 5 m, and may not be the remains of households, but are possibly agricultural features of some kind.

Southwest Quadrant

The southwestern quadrant of Xaman Witz was aggressively cleared by bulldozer and chain, which likely destroyed the majority of features in this area (Figure 0.34). The exception to this is the area directly west of La Milpa North, where the large architecture of the main group likely shielded smaller features from destruction. The central area of this quadrant is dominated by a wide drainage that collects water south of Groups SW3 and SW5 and north of SW6. In addition, Groups SW1 and SW2, which were subject to

archaeological excavation and intensive surface collections, are likely intimately connected with activities related to the social and economic functions of La Milpa North.

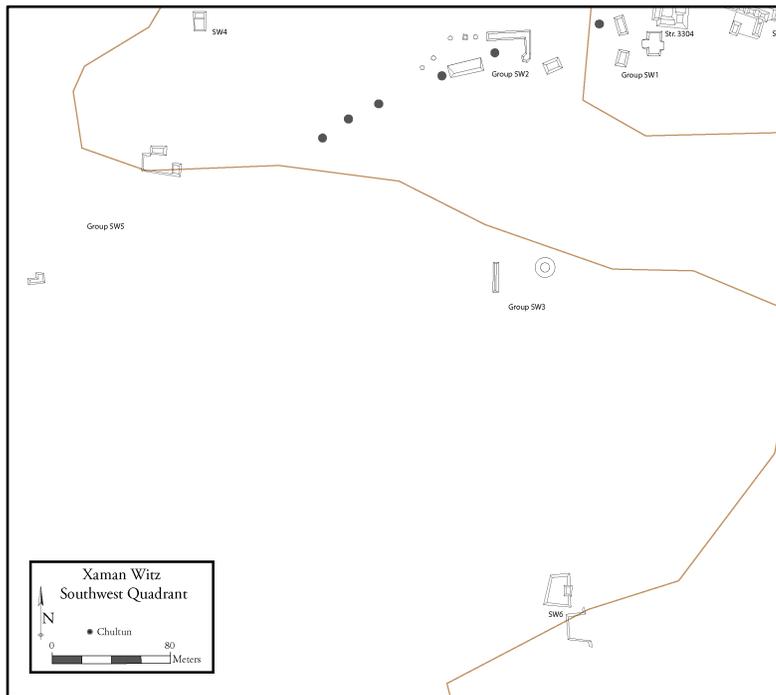


Figure 0.34. Xaman Witz Southwest Quadrant. Illustration by author.

Group SW1 consists of a low-lying (20 cm high) 10 m x 15.5 m mound with a 6.75 m x 12.25 m to its northwest and a 7 m x 10.25 m mound located to its southwest, each 30 cm in height. Group SW2 has a 10.25 m x 8 m mound on its east side, as well as an L-shaped mound, low and narrow, occupying an overall footprint of 29 m x 21 m. To the southwest of the L-shaped mound of SW2 is a 21.75 m x 9.75 m mound, the remains of a possible platform.

In the initial surveys of La Milpa North and its most immediate environs, surveyors noticed a high frequency of chert materials on the ground surface around

Groups SW1 and SW2. At SW1, a scatter of debitage, including many flakes, broken bifaces, cores, and flake-scarred chert nodules were found just east of the two mounds on the west side of the group, and at SW2, surveyors noted two distinct piles of chert nodules arranged on the possible rectangular platform in the southwestern part of the group and a series of five piles of chert debitage and fragments arrayed directly north of this platform.

In 2011, XWAP excavated a series of four Operation 3 test pits in the immediate vicinity of SW1. Suboperations 3-A, 3-B, 3-C and 3-D) were excavated to bedrock in proximity to this surface find to gather additional evidence of lithic production in this area. Suboperation 3-A did contain a large quantity of lithic materials, including microliths (debitage of a size equal to or less than 3 mm) on the top layers. In lower layers of Suboperation 3-A however, the presence of construction fill materials indicated that this area was built as a structural platform. Down slope and to the west of this structure, suboperations 3-B, 3-C, and 3-D revealed additional evidence of lithic production, including concentrations of debitage, microdebitage, biface preforms, and a few flake tools. In the 2015 field season, suboperation 3-P was deployed to sample a debitage mound adjacent to the far west platform of Group SW2. This 1x1 m suboperation was excavated in 2 lots each approximately 10 cm depth. 3-P-1 yielded a dense layer of fire-cracked chert pieces, likely the result of burning during the recent conversion of the forest to pasture. Recovered ceramics from this lot dated to the Tepeu 2-3 period of the Terminal Classic period. Lot 3-P-2 yielded limestone cobbles, ceramic

materials from the Tepeu 2 period of the Late Classic, and darker more rich soils, a pattern consistent with construction fill. This feature was determined to be a roughly square 3 m x 3 m platform, and not entirely composed of debitage as previously assumed. This platform's chronological sequence is also notably consistent with that of the core structures of La Milpa North. The dimensions of the platform excavated by suboperation 3-P may suggest a non-domestic function, and chert materials recovered in 3-P-1 suggest a relationship between this platform and lithic production processes. Unfortunately, the condition of the recovered sample renders it largely unanalyzable. Lithic materials from suboperations 3-A through 3-D have been analyzed and indicate final stage reduction in the production of lithic tools (see chapter 6).

A series of six chultuns are also present along the edge of the southwestern slope of the La Milpa North Hilltop. SW1 has a chultun located among its architectural arrangements, while SW2 has two of these features in close proximity to the possible work area. Three more of these probable storage features are relatively evenly spaced just down the western declivity.

Group SW3 is located directly south of Group SW2 and contains a very low 4.25 m x 20.24 m mound and a round mound of collapse 12.5 m in diameter. The round feature was slated for further investigation as its close proximity to the main drainage to the south of the La Milpa North hilltop and unusual morphology were relevant to this project. Round shrines are rare in the Classic period in northwestern Belize (Harrison-Buck 2012) but do occasionally appear in the archaeological record in the Three Rivers

region (Trachman 2007:226–27) and at Nohmul, Belize (Chase and Chase 1982).

Unfortunately, the farmhands who work this property mistook the possible structure for a rubble pile and removed the visible portions of the structure in the process of land clearance sometime between the 2014 and 2015 field seasons of this project.

Directly west of groups SW1 and SW2 lay Group SW4 and Structure SW5. These mounds have dimensions and plans consistent with relatively elaborate residential spaces. SW5, is a mound atop the northern segment of a 7.25 m x 14.25 m possible patio platform. Group SW4 contains a possible platform mound with two distinct structures placed on its 26 m x 19.5 m base and an L-shaped possible household mound with a footprint of 11.5 m x 7.25 m.

Group SW6 is aligned directly south of the round feature observed in SW3 and is placed on the apex of a rise the main drainage to the north. The main feature of SW6 is a possible platform 16.5 m x 22.5 m in length and width with a 5 m x 7.5 m mound on its eastern side, approximately 2 m in height. South of this mound, a 40 cm high U-shaped wall faces eastward. The function of this wall is unknown, but it appears to bound, on three sides, a low depression, naturally present or perhaps excavated, in the bedrock.

Chronology and Interpretations

The excavation and survey data discussed above is now synthesized with regional chronological frameworks, to situate La Milpa North and Xaman Witz in their temporal contexts. This chronology is incomplete, in part because the data generated by XWAP are incomplete, limited by the methods and excavation strategies employed by this project

and the limited availability of time and resources. In addition, despite a more than a quarter century of research in the Three Rivers Region, our understandings of the chronology of the area remain imperfect and are subject to continual revision as additional data become available.

Furthermore, XWAP relies on seriation dating techniques using Type:Variety analysis (chapter 3), placing ceramic materials in a temporal framework based on the morphological characteristics of individual sherds, which are themselves crude, due to the apparent conservatism of ancient Maya cultures in the Three Rivers Region and their slow adoption of new styles and production techniques. This leads to a relatively coarse regional framework, such that many modifications to the landscape are characterized as contemporaneous because they occurred within the same ceramic phase. We are limited by our inability to determine chronologies at a sufficient resolution to detect and determine the proper construction history. The section that follows is a 'best-effort', using the best available data and methods to construct a chronological history of La Milpa North and Xaman Witz.

The Three Rivers Region Prior to the Settlement of La Milpa North

Although evidence for Paleoindian and Archaic (pre-1000 BC) and occupations is mounting in adjacent regions (Lohse, 2010; Lohse et al., 2006), data regarding human interaction with the Three Rivers Region in periods prior to the Middle Preclassic is quite limited. Studies of *bajos* in the region demonstrate that widespread agricultural land

clearance was underway prior to the Middle Preclassic (Dunning, Beach, and Luzzadder-Beach 2006), but other signatures of human activity and that but ceramics from earlier periods are currently absent from the assemblage.

La Milpa was first occupied in the Middle Preclassic though the settlement was limited to that of a small farming village until the Late Preclassic period, in which the ceremonial precincts of La Milpa began to take form (Tourtellot et al. 1994). At this time, settlements were nucleated around the villages that would eventually become major centers in the Late Preclassic (Sullivan 2002; Zaro and Houk 2012) and not widely dispersed. The increased frequency and style of ceramics demonstrate that the middle to late Preclassic period was one of marked demographic growth and intense interregional interaction for the Three Rivers Region (Sullivan and Sagebiel 2003). Evidence for land clearance activities for the purposes of settlement construction and agriculture also becomes more visible (Hageman and Lohse 2003).

Currently, there is no direct evidence of human-environment interaction at La Milpa North or Xaman Witz during the Archaic or Preclassic periods. Nevertheless, the site of Xaman Witz is situated on conspicuous hilltop, and the landscape around the margins of the Dumbbell Bajo were known to the Maya in Preclassic times, including some settlement around the northern edge (Barrett 2004). Despite the lack of data regarding land use for these early periods, Xaman Witz was most likely a landmark on the social landscapes of nearby communities. It is possible that human-environment

interaction of some kind occurred at this site, but left traces too ephemeral to be identified or occurred in areas that were not sampled by this project.

Early Classic

The earliest evidence of occupation at La Milpa North and Xaman Witz, the surrounding community, comes from a group of ceramic sherds found and collected, in suboperation 6-O-1, during survey efforts on the platform to the north of Structure 3303 designated the Northern Platform. The root system of a recently fallen tree unearthed the partial remains of an Aguila Orange basal-flange vessel, a common type and form in the Early Classic period, as well as other sherds of the same period.

A series of test pits excavations were carried out on the Northern Platform to recover more evidence of an Early Classic occupation in that part of the site. Suboperations 1-L, 1-M, 1-N were placed near and on the basal platform of Structure 3309, a large L-shaped structure placed on the extensive platform to the north of La Milpa North. In total, these suboperations found no evidence of the platform predating the Late Classic period, and the ceramics yielded by these excavations are entirely limited to Tepeu 2/3 phase of the Late to Terminal Classic. In some, these excavations confirm that the raising of the Northern Platform occurred not in the Early Classic as was previously suspected, but in later periods.

Furthermore, no other excavation unit or surface collection yielded any ceramics from a complex associated with a period earlier than Tepeu 2. These data tentatively suggest that inhabitation of this landscape was limited in periods prior to the Late Classic.

The population expansion that occurred at La Milpa in the Early Classic period produced the first recovered markers of human activity at La Milpa North. While the disturbed context of the Early Classic ceramics prohibits any detailed discussion of the origin of these materials, it is possible that they were once imbedded in a platform or house mound dating to the Early Classic period that was buried beneath the Northern Platform.

While the finds of 6-O-1 are unique at the site, I do not intend to suggest that other Early Classic materials do not exist at La Milpa North. It is quite likely that the lack of such materials is a result of sampling bias resulting from the excavation and surface collection strategies of this project. The ancient Maya often built their structures upon the remains of previous ones, and it is therefore possible that early materials lie beneath later construction episodes. As time and resources allowed for only limited vertical excavations, evidence for occupation in these earlier periods may be under-represented in the assemblage. Although the nature of human interaction with Xaman Witz in the Early Classic remains uncertain, it is clear the built environment of La Milpa North underwent a major transformation in the Late Classic.

Late Classic

The Late Classic period was a period of demographic florescence at La Milpa and the Three Rivers Region. The most ambitious construction project at La Milpa were undertaken during this time (Hammond et al. 1998), and hinterland settlements increased in both extent and density (Rose 2000), as the site became a regional power, increasingly

independent from sites in the Petén (Sullivan 2002). The settlement of Xaman Witz most likely underwent significant transformations as well, though a more precise chronological understanding of the site awaits further excavation of residential areas. XWAP did, however, find that the Late Classic was a period of significant modification of the hilltop, which, by the end of the period, would become La Milpa North.

During the Tepeu 2 ceramic phase of the Late Classic, the architects and builders of La Milpa North laid the foundations of all six elevated courtyards and plazas at the site. Construction proceeded in a consistent pattern to yield equivalent elevations for the final surfaces of all courtyards. In situations where a courtyard elevation 25 cm or more above bedrock was desired, the bedrock was first cleared of existent soils and then large limestone cobbles were used to rapidly elevate surface levels. Subsequently, smaller limestone cobbles, soils, and repurposed household midden materials were applied to create a roughly level surface and fill in gaps within the large cobbles. Finally, finer materials, including very small cobbles and household refuse were laid down prior to applying the final plaster surfacing. In situations where the desired surface elevation was less than 25 cm above bedrock, only small cobble and midden fills were used to elevate and level courtyard surfaces. In both cases, the final step in courtyard construction was to apply a thin layer, usually less than 3 cm, of plaster.

At Structure 3301, excavations have yielded evidence of significant remodeling of this group in the Terminal Classic. Therefore, its Classic period plan is presently unknown. From its initial construction in the Late Classic to its abandonment in the

Terminal Classic, it is known that this structure had multiple iterations in which an open plaza plan was ultimately enclosed. Excavations within this structure group were not extensive enough to fully document all previous iterations, but they do suggest that the substructure underneath Room 7, a room that would be remodeled into Rooms 1 and 2, and possibly Room 4, predate the other buildings and retention-walls that enclosed the Structure 3301 courtyard. Room 5 is also new or a remodeling, as it appears to have been placed over the existent plaster surfacing of the Structure 3301 courtyard entryway. Furthermore, excavations of the Room 1 bench demonstrate the existence of an unbuilt but plastered corner on the northeast portion of the Structure 3301 courtyard. These data indicate that during its initial phases, Structure 3301 was not fully enclosed. Rather, it had a semi-open plan during the Tepeu 2 period and was most likely a series of independent structures placed on the edges of the Structure 3301 courtyard.

The landscape around La Milpa North was also taking shape during the Tepeu 2 period. Stela 22 was placed at this time on a setting that aligned with northernmost sides of the building beneath Room 7 and the northern arm of Structure 3303 (see Figure xxx). Structure 3306, directly south of the stone monument, did not yet exist. Spaces between courtyards appear to have been left unmodified during this time, as the packed earth floor dates to a later period.

Terminal Classic

For the Three Rivers Region, the Terminal Classic was a time of significant demographic decline, from the apex of population density present at the onset of the

period to nearly complete abandonment by the beginning of the Postclassic, likely the result of a confluence of political and ecological stressors (Chapter 1). These stressors however, were met with a re-prioritization in architectural programs and emergent modes of social and political organization in which nodes of political power emerged in hinterland contexts.

In Tepeu 2/3 times, the landscape of La Milpa North and Xaman Witz underwent significant transformations. This period was the height of population density at Xaman Witz as all surface collections from possible structure mounds date to this period. In addition, this period oversaw the emergence of a more aggrandized and specialized architectural configuration at La Milpa North.

During this span, spaces in between the elevated courtyards at La Milpa North were leveled out and surfaced by first using household midden construction fill to create a level surface for a packed dirt floor. In some cases, such as that encountered by Suboperation 1-J, placed in the walkway between Structures 3301 and 3302, only the natural undulations in the bedrock were in-filled prior to the placement of a packed earth surface (Figure 0.2). This packed earth surface extended not only between within La Milpa but was also observed to the north of Structure 3301, perhaps extending far to the north, covering the Northern Platform which was constructed in this period.

The Northern Platform was elevated from bedrock during the time of Tepeu 2/3 pottery, using similar construction techniques observed during the previous period; examples include the use of progressively smaller limestone cobbles and denser

concentrations of midden construction fill near the eventual surface layer. It is likely that a packed dirt surface extended across the length of this platform and southward toward the center of La Milpa North. Three structures were placed on the newly built Northern Platform. Two of these were large masonry-walled and corbel vaulted structures in an L-Shaped configuration, and one appears to be a platform more closely associated with a possible causeway than the other structures in this area.

With the completion of the Northern Platform, a possible causeway that bisects La Milpa North, running between Structures 3303 and 3304 took its final form. Evidence for this causeway at La Milpa North is presently limited to the shape of the landscape in this area. Three tiers carved into the land to the north and west of the northwestern corner of Structure 3303 may be steps defining major throughways that bisect La Milpa North and connects it to the site center of La Milpa as well as the causeway terminus at Tzak Naab, to the northeast (Chapter 5). Structure 3306 also appears to have been added to the overall configuration based on the Tepeu 2/3 ceramics recovered from its construction fill contexts (Figure 0.2).

During this period, Structure 3301 underwent significant remodeling to reach its final form. This included the addition or remodeling of several rooms, fully enclosing the courtyard, modifying the entryway, and creating a possible ceremonial space. In addition, several chert wall shims were located in both collapsed walls and in-situ, indicating that the walls of Structure 3301 required continual upkeep, which was likely an activity that occurred both in the Late Classic and in the Terminal Classic.

Rooms 6 and 7 were added by in-filling an existent room and construction Room 6 atop it to complete Room 6 and a small room, Room 7 attached to it. It is possible that Room 6 served as a wherein small-scale semi-public ritual were conducted on the platform in front of Room 6 while private activities occurred in the interior spaces of Room 6 (Figure 0.35). A similar plan was recently located within the Guzman Group, a secondary center in the northern hinterlands of El Palmar, a nearby site in Campeche, Mexico (Tsukamoto et al. 2015). Much like La Milpa North, the Guzman group is an elite residence and administrative center. Like Structure 3301 Room 6, Structure GZ1 of the Guzman Group is a corbel-vaulted structure placed on top of a substructure platform with a set of five stairs connecting the platform to the plaza below. The staircase at the Guzman Group however, was adorned with hieroglyphic texts that refer to the structure as a temple of a *lakam*, a hereditary military and diplomatic position (Tsukamoto et al. 2015). Given the similarities in structure plan and position on the landscape, it is likely that the two groups share similar functions, and therefore Room 6 is interpreted to be a temple or ancestral shrine.

At the dedication of the new temple, a deer hindquarter was cached at the base of the Structure 3301 Room 6 staircase, a possible indication of its significance. In the Dresden codex, pages 25 to 28 detail directional sacrifices of animals and flowers. In this text, one appropriate sacrifice to a world direction is a deer haunch. An identical scene can be found on the west wall of the San Bartolo Murals, in which a hunter figure sacrifices a deer before a world tree representing a quarter of the world (Taube et al.

2010). Given the association between deer sacrifices and directional ritual in ancient Maya ritual practice, it is possible that a deer haunch was understood as an appropriate sacrifice to mark the dedication of a temple placed in a directionally significant location relative to the center of La Milpa.

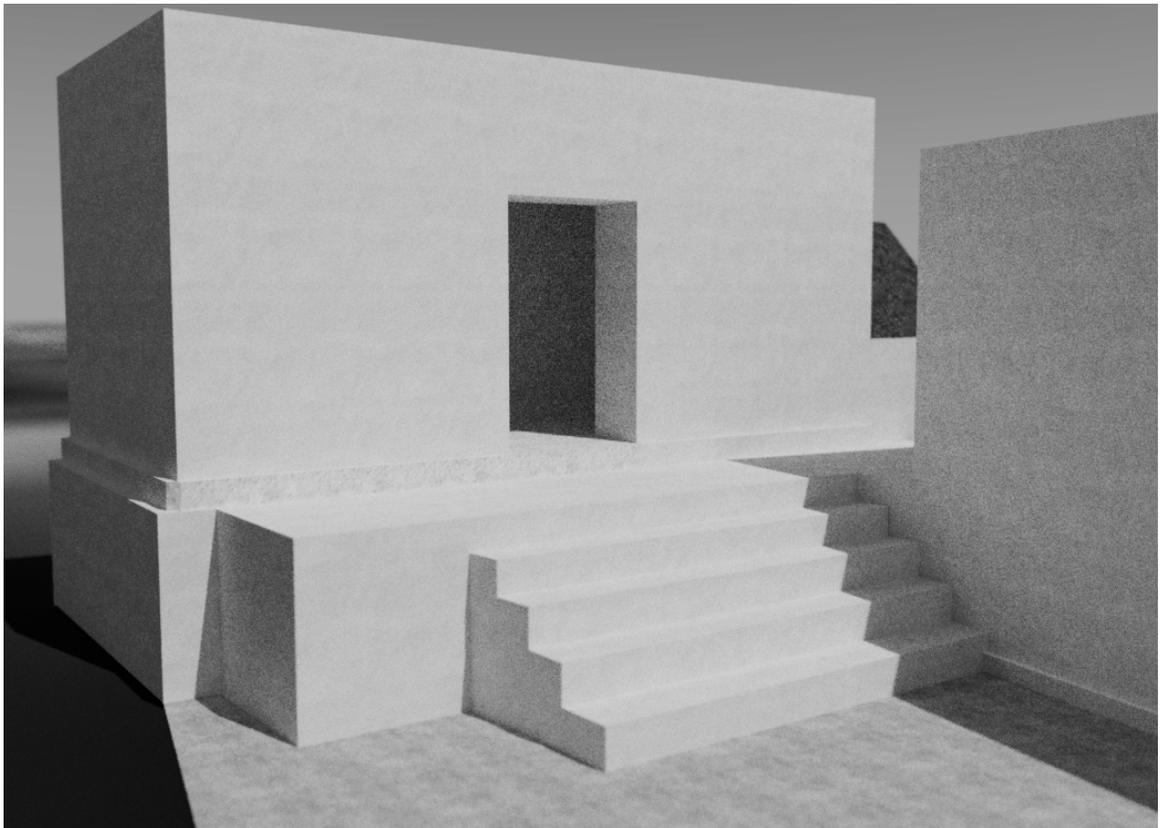


Figure 0.35. 3-D reconstruction of Room 6 as viewed from the southeast. Render by author.

Room 7, abutting Structure 3301 Temple 1 to the east may have served as a kitchen. Room 7's perishable superstructure, evidence of burning on its plaster surface, proximity to the midden feature, and location relative to the rest of Structure 3301 suggests that this space was involved in food preparation. These features correspond well to conditions established by LeCount (2010) who argues that the presence of a

conjunction of features, including burned floors, bench workspaces, adjacency to midden features, and attachment to elite residences, are features of kitchens used to support elite residences.

The Structure 3301 entryway was also heavily modified at this time. The addition of Room 5 in the Terminal Classic constrained the threshold into the courtyard down to 1.4 m, creating an architectural arrangement that decreased visual and motile access into the courtyard and directed the gaze of the entrant to the doorway of Room 2 (Figure 0.36).

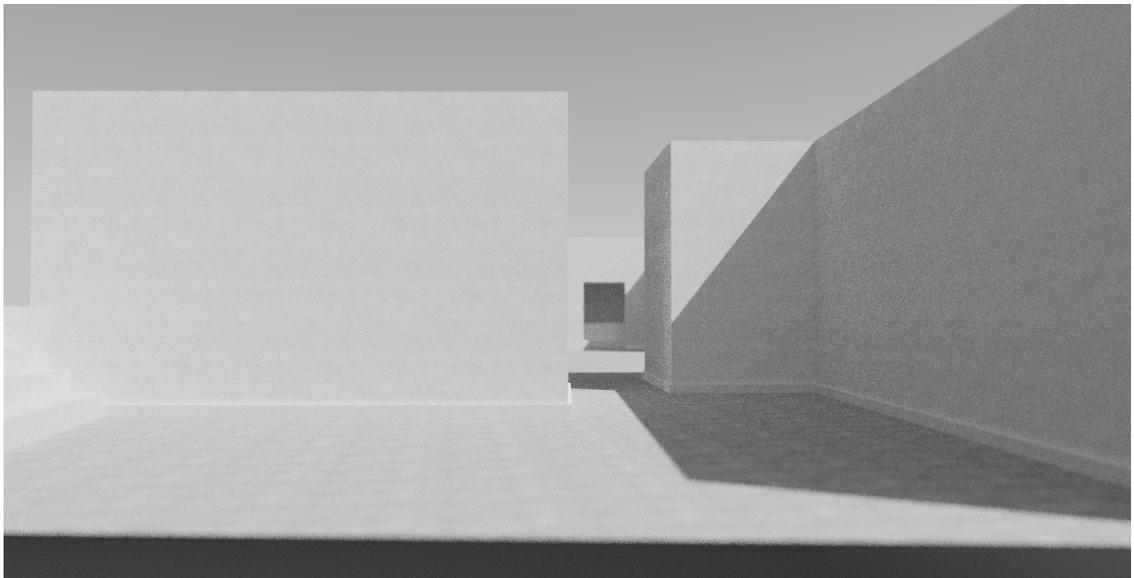


Figure 0.36. 3-D reconstruction of the view into the Structure 3301 courtyard from the entryway facing east. Render by author.

The artifact assemblage of La Milpa North demonstrates that its residents maintained connections to distant places during this period. It acquired obsidian from the El Chayal source in Guatemala (Appendix 3), granites from the Maya Mountains in

Central Belize (appendix 4), and shell, most likely from the Atlantic coast (Figure 0.37). The acquisition of high-quality materials from faraway locals indicates a degree of status and interconnectedness on behalf of the residents of La Milpa North.

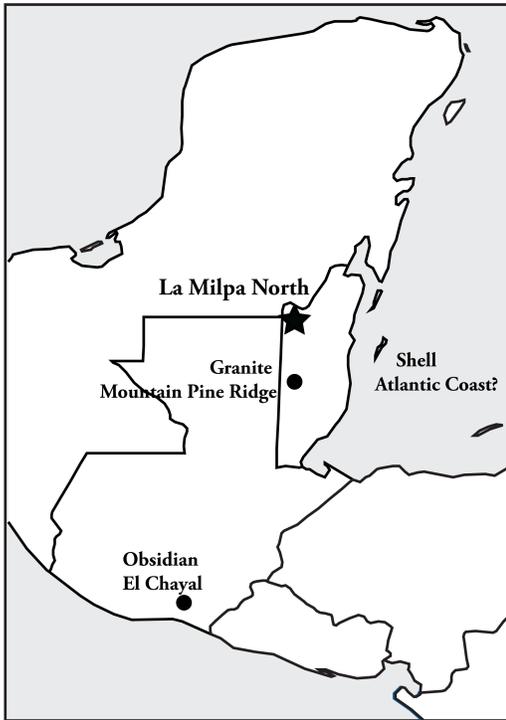


Figure 0.37. Map of the sources of non-local goods. Illustration by author.

Xaman Witz in the Terminal Classic

The community or communities within Xaman Witz are arranged across the slopes surrounding La Milpa North. While it is difficult to attempt to establish boundary lines between groups in a way that reflects emic practices of identity construction, distribution or clustering of features on the landscape may offer some insight into community organization and structure. The following section examines the spatial patterning of structures outside of the La Milpa North core precinct. The goal of this

analysis is to provide a measure of social context regarding the immediate zones of habitation around La Milpa North. It is worth mentioning here that these data are incomplete for two main reasons. Firstly, land clearance practices in areas to the south of La Milpa North were particularly destructive and secondly, this activity occurred earlier in the southern areas than northern areas, thereby rendering southern portions of the site more vulnerable to processes of erosion.

Late to Terminal Classic La Milpa North as a Palace Compound

Shortly after relocating and mapping La Milpa North, Tourtellot and other La Milpa Archaeological Project (LaMAP) researchers, finding similarities between this site and architecture of La Milpa Center, described the site as a “residential palace rather than a ceremonial plaza group” (Tourtellot et al. 2000:481). This interpretation appears to be based on architectural plan alone, as only LaMAP conducted limited excavations at the site. One of the goal of that project, as a byproduct of other research interests, was to test the assumption that the mounds and courtyards of La Milpa North in fact constitute a palace, which is itself a term that is not often clearly defined or consistently applied across contexts.

Peter Harrison (1970), in his dissertation, traces the application of the term “palace” in the Maya region and finds that it has a long and complex history. Though Harrison’s (1970) entire treatment of this history need not be reproduced here, he finds that use of term in the Maya region originated with Spanish use in the colonial period and was applied uncritically by Archaeologists until the 1930s. At this time, scholars began

rethinking their interpretations of architectural spaces, recognizing that “palace” was itself loaded with numerous contemporary cultural assumptions that may not be applicable to ancient places (Harrison 1970:203–24). Recently, scholarly attention to this designation has been framed as an effort to de-link western assumptions from archaeological interpretations of architectural remains (e.g. Christie 2003; Inomata 2001a; Inomata and Triadan 2003).

Once used as a catch-all to distinguish between monumental constructions with multiple rooms from temple architecture (Christie 2003:3), recent efforts to rethink this term has left it more difficult to define. As Ryan Mongelluzzo (2011:58) argues, clearly defining palaces in ancient Mesoamerica is difficult because palaces are fundamentally both architectural and social concepts, being simultaneously places of residence for members of elite political classes as well as spaces wherein the practices of governance are carried out (see also Barber and Joyce 2006). Households and state administrative centers contain ideological and practical aspects that are in themselves not easily disentangled. In addition, architectural complexes described as palatial are located both in the central precincts of major centers and outside of them, and may be royal or non-royal residences and administrative nodes (Mongelluzzo 2011:38). The diversity of palace forms and locations complicates efforts to construct a single universal definition. In addition, Takeshi Inomata and Daniela Triadan (2003) encourage scholars to problematize their use of the terms elite, elite residence, and palace, on the basis that these terms are self-referential and self-constituting, and argue that, in some cases, what

is ostensibly an elite residence may in fact be the product of accumulated construction over time.

Despite the difficulties in defining “palace” in ancient Maya contexts, some general trends in the contemporary use of the term have emerged. Inomata (2001a:341) differentiates between elite residences and palace-type structures by arguing that the former is defined by its function as residences for elite persons, regardless of the structures’ morphological characteristics the while latter term is defined as large and elaborate complexes, irrespective of their function. For Inomata (2001a:341), palaces are both elite residences and large and elaborate complexes. In addition, palace architecture embodies symbolic meanings through both their monumental scale and elaborate design, producing spaces for direct engagements between powerful individuals and the public, and controlling embodied experiences (Inomata 2001a:358). The social value of palaces is enhanced through human action, including courtly performance and other activities carried out within the confines of these spaces (Inomata 2001a:343–45). Similarly, Sarah Barber and Arthur Joyce (2006) argue that palaces are elite residences that also contain spaces for the aggrandizement of an individual or lineage (as opposed to supernatural forces) and are intertwined with the function of political power. In their view, palaces use architecture to simultaneously reflect and shape social discourse and differential relations of power, creating arenas in which social differences are reproduced and communicated (Barber and Joyce 2006:246).

Mongelluzzo (2011), in his multi-site study of ancient Maya palatial complexes, synthesizes arguments regarding what constitutes a palace with a study of the morphology of multiple royal courts to propose that palaces have a number of common elements. This approach is quite valuable to scholars who seek to define architectural spaces as palaces because the probability of the space in question having functioned as such is high if it contains all of the elements he identifies. These include 1) proximity to public monumental architecture (e.g. temples, ballcourts, and causeways), 2) architectural elements to control access and surveil surrounding areas, 3) purposely built locations for interacting with rulers, which create and express differential relations of power between ruler and supplicant in their spatial dynamics, and 4) enclosed private courtyards and rooms to control/limit visual and auditory access to interior spaces (Mongelluzzo 2011:333–34). In addition, evidence for habitation of these spaces would be ideal, though direct evidence of this activity is often far too ephemeral to be directly identified. Instead, it must be inferred from features that may have multiple uses, such as enclosed rooms and benches out of view of doorways, which would be suitable for sleeping (Harrison 1970:170).

Based on both Inomata's (2001) criteria for applying the term "palace" to certain ancient Maya architectural arrangements, I agree with the interpretation of La Milpa North as a palace first proposed by Tourtellot and colleagues (2000). The architecture of La Milpa North has a monumental scale and elaborateness, relative to that encountered in its proximity, and was built in a short period of time, suggesting that for Inomata (2001),

the term palace-type structure is applicable. In addition, as discussed in detail in Chapter 6, the elite status of occupants can be inferred from the evidence of non-domestic production activities, such as the working of shell and fine dyed cloth (Emery and Aoyama 2007; Widmer 2009), located by excavations in Structure 3301 (Heller and Burns 2014).

La Milpa North also directly satisfies the criteria for interpreting an ancient Maya architectural arrangement as a palace outlined by Mongelluzzo (2011). La Milpa North contains temple architecture integrated into Structure 3301 and 3303 and is adjacent to a possible causeway and therefore nevertheless satisfies the first criterion outlined by Mongelluzzo (2011). La Milpa North's hilltop location and architectural arrangements fulfill the second criteria by providing an excellent 360-degree viewshed suitable for surveillance of both a large swath of territory and its immediate environs. The third criterion is best exemplified by the architecture of Structure 3301 that, as argued in Chapter 7, was not only purposely built to communicate social difference through its elaborate and resource intensive construction, but also controlled the embodied experience of people moving through its entryway by highlighting a temple and directing vision to the main throne room and audience space of the temple. Because La Milpa North was designed and constructed as a series of five main groups of structures each surrounding an enclosed courtyard, Mongelluzzo's (2011) fourth criterion is also satisfied. Excavations in Structure 3301 revealed a diverse array of bench designs, many of which were both large and out of view of doorways, making them suitable for sleeping

and other habitation activities. Based on the above, I assert that the use of the term palace is justified at La Milpa North.

Abandonment

The end of the Terminal Classic is associated with what is popularly known as the “Maya Collapse”, a series of events leading to periods of major sociopolitical reorganizations and, in some cases, regional depopulations. Today, most scholars would agree that there exists no single “prime-mover” for the collapse of Classic period Maya civilization, but rather a system of deeply interconnected regions fell for myriad reasons including interrelated ecological and sociopolitical factors (Webster 2002; Chase and Chase 2004).

In the Three Rivers Region, the end of the Terminal Classic is a period marked by the widespread depopulation of the landscape, the cause of which remain somewhat elusive (Sullivan, Houk, and Valdez 2007), but are likely linked to a series of droughts that affected the Maya Lowlands beginning in 760 AD (Dunning, Beach, and Luzzadder-Beach 2012), with major episodes of drought in 810 AD, 860 AD, and an extended dry period lasting from the late ninth century to the early tenth century (Dunning et al. 2012; Luzzadder-Beach, Beach, and Dunning 2012). These dry periods and episodes of drought caused exceptional stress on an agricultural system already at its limits after precipitous increase in population throughout the Classic Period (Luzzadder-Beach et al. 2012).

Excavations at La Milpa center do not yield evidence of an episode of violence at the end of its occupation, but rather a more peaceable decline in which erections of

monuments cease and major construction projects appear to be left unfinished (Hammond and Tourtellot 2004). Gregory Zaro and Brett Houk (2012) find similar evidence of a slow decline. They argue that at La Milpa, unfinished construction projects, evidence for a limited phase of occupation as late as the tenth century, and the high frequency rooms in the central precinct cleared of artifacts and debris, tell of a decline in the political prominence of La Milpa and its ruling family, followed by a gradual abandonment (Zaro and Houk 2012).

At La Milpa North, excavations within Structure 3301 yielded evidence of the activities that occurred near the end of occupation at the site and shed light on the circumstances surrounding the eventual abandonment of the palace during the Terminal Classic. These data reveal the nature of the final moments of occupation at this place and connect it to the broader contexts of the end of Classic Maya occupation in this region. The material remains of two activities can be most closely associated with the abandonment of La Milpa North. The first is the penetration into the plaster floor in the southwestern corner of Room 1, behind the original doorway to the structure, likely the result of excavating to retrieve an object or set of objects cached in that location. The second is the creation of Problematic Deposit 1, described earlier in this chapter as the artifact-rich layer of ash above the ancient courtyard surface of Structure 3301 and against the exterior walls of Rooms 1 and 2.

Ritualized caching practices, or the ceremonial subsurface depositions of precious materials are common throughout the Maya world in multiple contexts (W. R. Coe 1965).

Interior caches, or those placed underneath the surfaces of buildings are of increasing importance to elite households in the Late Classic period and areas behind entrances to interior spaces become prominent locations for caching activities (Maxwell 1996). Such actions served to sanctify the space and imbue it with a life force through ritual action (Garber, Driver, Sullivan, & Glassman, 1998). The intrusion into the plaster surface within the southwestern corner of Room 1 likely represents an effort to retrieve a cache placed behind a doorway.

The semicircular cut penetrated through the floor and into the fill of the building. Several artifacts, most notably lithic tools crafted from a pale purple chert, possibly associated with the cache, were scattered around the intrusion. Though it is impossible to know what item was once deposited there, it clearly held sufficient value to warrant its retrieval prior to abandonment. The value of the retrieved object or objects may have been an exchange value, perhaps an item that would help fund the relocation of the elite household, or it may have had a social or ceremonial value, something too dear to the group to be left behind. The burning episode evident from the matrix just above the intrusion into the plaster may speak to ritual burning activities associated with either the cache itself or the act of removing the cache from its previous placement beneath the plaster surface behind the original door.

The retrieval was fundamentally an act of social memory. The retrieved cache was most likely a dedicatory one, deposited at date that cannot be precisely known, but likely during or shortly after the construction of the original structure, long before it was

remodeled. The final set of occupants at La Milpa North remembered the exact location of the cache, possibly generations after its initial placement, and recalled the social or economic value of the cached items.

Problematic Deposit 1 may also be associated with the final days or hours of ancient Maya occupation at La Milpa North. As the name suggests, problematic deposits are notoriously difficult to differentiate as some may be middens, post-abandonment depositions resulting from “squatting”, desecration from invading forces, or the result of ceremonial behavior associated with the ritual termination of a significant structure, which the Maya conceived of as living social entities (Stanton, Brown, and Pagliaro 2008).

Within Problematic Deposit 1, quotidian objects used in daily life are smashed and burned. These include water jars, ground stone manos and metates, chert tools, loom weights, spindle whorls, and the charred remains of plants (Heller and Burns 2014). While all these items may also make their way into midden contexts, a granite metate fragment found on the northern bench of Room 5 refit with a piece found in Problematic Deposit 1, which demands an interpretation beyond normal deposition practices. This indicates intentionality to Problematic Deposit 1 and lends itself to an interpretation of this deposit as a ritualized deposit associated with the end of occupation at La Milpa North. At least some of the items were broken, with fragments of them left in places where they had been used or stored, while other fragments were cast into the fire burning at the eastern edge of the Structure 3301 courtyard. I argue that the breaking, leaving a

portion of the item in place, and depositing the remainder in a semi-public ritual represents a reverential termination deposit (see Pagliaro, Garber, and Stanton 2003). In this case, the ancient Maya inhabitants of La Milpa North believed that “one cycle of life must be terminated before the next may begin” (Pagliaro et al. 2003), and performed the prescribed rituals accordingly.

Interestingly, there are parallels to this behavior at the Guzman Group of El Palmar, Campeche, Mexico, a site which has several prominent similarities to La Milpa North. Within the Guzman Group, Tsukamoto (2017) reports a termination ritual deposit centered around Structure GZ1. Several sherds refit with those found in rooms in an adjacent structure, indicating an intentional deposition of broken vessel sherds in multiple discrete locations. This is a very similar pattern of behavior as that observed at La Milpa North, with the exception of the loci of the termination ritual activities. At La Milpa North, the main termination ritual deposit was located adjacent to the entrance of Structure 3301 Room 2, and excavations around Structure 3301 Temple 1 provided no indications of termination ritual deposition.

The cache retrieval found in Room 1 and termination ritual in the Structure 3301 courtyard both speak to an orderly abandonment of La Milpa North. Here, we do not find evidence of an invading force, nor a hasty exit from the household. Rather, these data indicate a methodical departure, in which the residents of La Milpa North had sufficient time and resources to fulfill their social obligations to their belongings and their community by performing the appropriate rituals prior to abandonment and gather their

most precious items of value, even if interred beneath the floors of their residence. It unclear where the residents of the palace went, but the fact that they left in an orderly fashion suggests they possessed the social and economic capital required to relocate to a more hospitable region.

Postclassic and Historical Period

The Three Rivers Region remained largely depopulated after the end of the Terminal Classic, with only trace evidence of settlement after the abandonment of La Milpa (Hammond and Tourtellot 2004). Within two centuries, the forests, once cleared to make way for agriculture and settlement, had returned to their pre-Maya levels of density (Dunning et al. 2012). Though few people remained on the landscape on a full-time basis, Postclassic visitation and veneration of important places continued during this period (Hammond and Bobo 1994), including at ritual features in hinterland communities (Hyde and Martin 2009). No traces of this activity however, have yet emerged at La Milpa North. The lack of data however, does not conclusively indicate that La Milpa North and Xaman Witz had been forgotten or remained unvisited until contemporary periods, but whatever visitation may have occurred, XWAP detected no trace of it.

Modern Day

Currently, the landscape of Xaman Witz is a productive pasture owned by a Mennonite farming family in the community of Blue Creek, Orange Walk district, Belize. The ranch is home to at least one hundred cattle and horses. The only standing structures in use today are a ranch house with a water collection system, an outhouse, and a small

open-air roofed structure attached to an enclosure pen. A series of cardinally aligned roads cut across the property. The north-south dirt road connects the ranch to the rest of Blue Creek by cutting through the *bajo*, and a prominent east-west throughway connects the gate at the entrance of the property to the ranch house, running through the core of La Milpa North by bisecting the large architecture of the site from the northern plaza. Several less traveled and therefore less developed roads connect the various enclosures throughout the landscape.

Mennonite ranchers take advantage of the natural hydrology of the landscape as well. Water for drinking, by human and horse, is collected in large vats that contain the run off from the roof of the ranch house. The natural drainages are also used today. Large reservoirs are placed in the natural depressions on the landscape, enclosed by thick earthen walls constructed by bulldozer. The use of these drainages, including the main drainage to the south of the La Milpa North hilltop, reduces the amount of water that needs to be pumped or trucked in from elsewhere to meet livestock needs.

In my time here, I have seen the cultivatable acreage nearly double. While I have never directly observed land clearance, I have seen the aftermath. Land is cleared by controlled burning episodes, clearing underbrush and making way for removal of valuable timber and wood for fuel by chainsaw, bulldozer, and truck. Large limestone blocks, some unearthed by the fall of large trees, are piled in large stacks before being carried away some months or years later to improve mobility on the landscape for cattle and truck. The result of this is a scorched landscape, and XWAP surveyed many of these

cleared areas as it is easy to identify large outstanding mounds and features in this condition. Within a year's time, grass fills the formerly barren and burned land.

The land clearance has produced an impressive viewshed across the industrious modern agricultural landscape of Blue Creek. The Dumbbell Bajo, so named for the dumbbell-like shape of its extents, is home to a rotating crop cultivation, wherein rice is often grown in its most flooded areas during the rainy season. On its northern and slightly higher ends, cattle are raised in swampy semi-inundated fields. In the far distance, other Mennonite farming and pasturing endeavors may be seen.

To the south, the viewshed from the high points of La Milpa North affords a view of the Programme for Belize property line. The dense vegetation conceals a formerly densely populated landscape replete with ancient mounds, chultuns, and pyramidal structures buried under the dark humus of the rainforest. On the very far southern horizon, the upper portions of trees growing atop the largest pyramids of La Milpa (Structures 1 and 3) may be seen on clearer days.

To the north, several important archaeological sites may be observed. In the far distance to the north, the site of Bedrock, with an apparently similar size and configuration to La Milpa North can be seen placed high upon a ridge that overlooks the *bajo*. In addition, an I-shaped group of structure mounds is off the junction where the road to La Milpa North turns southward. Finally, the hinterland ceremonial center of Tzak Naab, and a ballcourt placed on a natural promontory located to the Northwest are

concealed by a remaining patch of forest, but 3D modeling of the landscape reveals that in the absence of the vegetation, it could be observed from the La Milpa North hilltop.

The spectacular viewshed from the La Milpa North hilltop has also attracted the attention of governments for policing and military purposes. The rainforests of Belize are commonly used by Commonwealth soldiers for training exercises and a surface collection of artifacts from military training activities show traces of a British military presence at Structure 3301. In addition, local informants report that the Belize Defense Force has, on more than one occasion, used the La Milpa North hilltop to surveil the airfield at Blue Creek during drug interdiction operations.

Conclusion

The chronology and basic interpretation of La Milpa North outlined above presents a complex history of occupation from the earliest traces of ancient Maya interaction to the modern day. These data demonstrate a complex history of interaction with the landscape beginning in at least the Early Classic, though the results of other research suggest this landscape was in use in earlier periods as well. By the end of the Terminal Classic, La Milpa North had become a sprawling palatial compound and a dominant visual presence on the social landscape of the region. The data presented in this chapter comprises the foundation on which further inferences are generated. The architectural and assemblage information presented. Due to the sampling biases of XWAP, the data presented here has a strong focus on this latter period, as does the forthcoming analysis.

Chapter 5: The La Milpa Cosmogram

Introduction

This chapter evaluates the presence of a La Milpa Cosmogram and La Milpa North's hypothesized place within it. This is an essential and organizing question for the Xaman Witz Archaeological Project (WXAP) because the La Milpa Cosmogram Hypothesis (LMCH) was not only the impetus for this program of research but is foundational to further interpretations. If the LMCH can be supported, then a great deal of information is available that structures the meaning and function of La Milpa North. If XWAP's program of research however, contravened the LMCH, an entirely different set of assumptions will inform the conclusions of this project.

This chapter begins by outlining previous research related to the LMCH. Subsequently, this chapter explores lines of evidence that either support the cosmographic interpretations applied to La Milpa North and some that may contradict those interpretations. The La Milpa Cosmogram is then compared to other proposed examples of cosmographic civic designs, primarily that found by Alan Maca (2002, 2006) at Copan, Honduras. The comparative example is then applied to construct alternate hypotheses regarding the form of the potential La Milpa Cosmogram.

The La Milpa Cosmogram Hypothesis

After discovering two secondary centers, La Milpa East (LME) and La Milpa South (LMS) along survey transects designed to measure settlement density, Tourtellot and colleagues (2000) hypothesized that La Milpa was the center point of a polity-wide

cosmogram. Realized by four equidistant outlying groups, each roughly 3.5 km from the center and cardinally oriented to the four world directions (Figure 0.1). Tourtellot and colleagues (2000) then successfully predicted the precise location of two additional outlying groups, Milpa West (LMW) and La Milpa North (LMN), marking the first application of a cosmological model of civic planning to predict the location of previously unknown architectural groups. La Milpa East, La Milpa West, and La Milpa South are pyramid plaza groups (conforming to Becker's (2004) PP2 type category) surrounding open-cornered plazas, suggesting a performative ritual function, among other potential uses. La Milpa North however, consists of a central S-shaped range structure that partially encloses two plazas and is surrounded by two enclosed courtyard structures to the east, and two to the west.

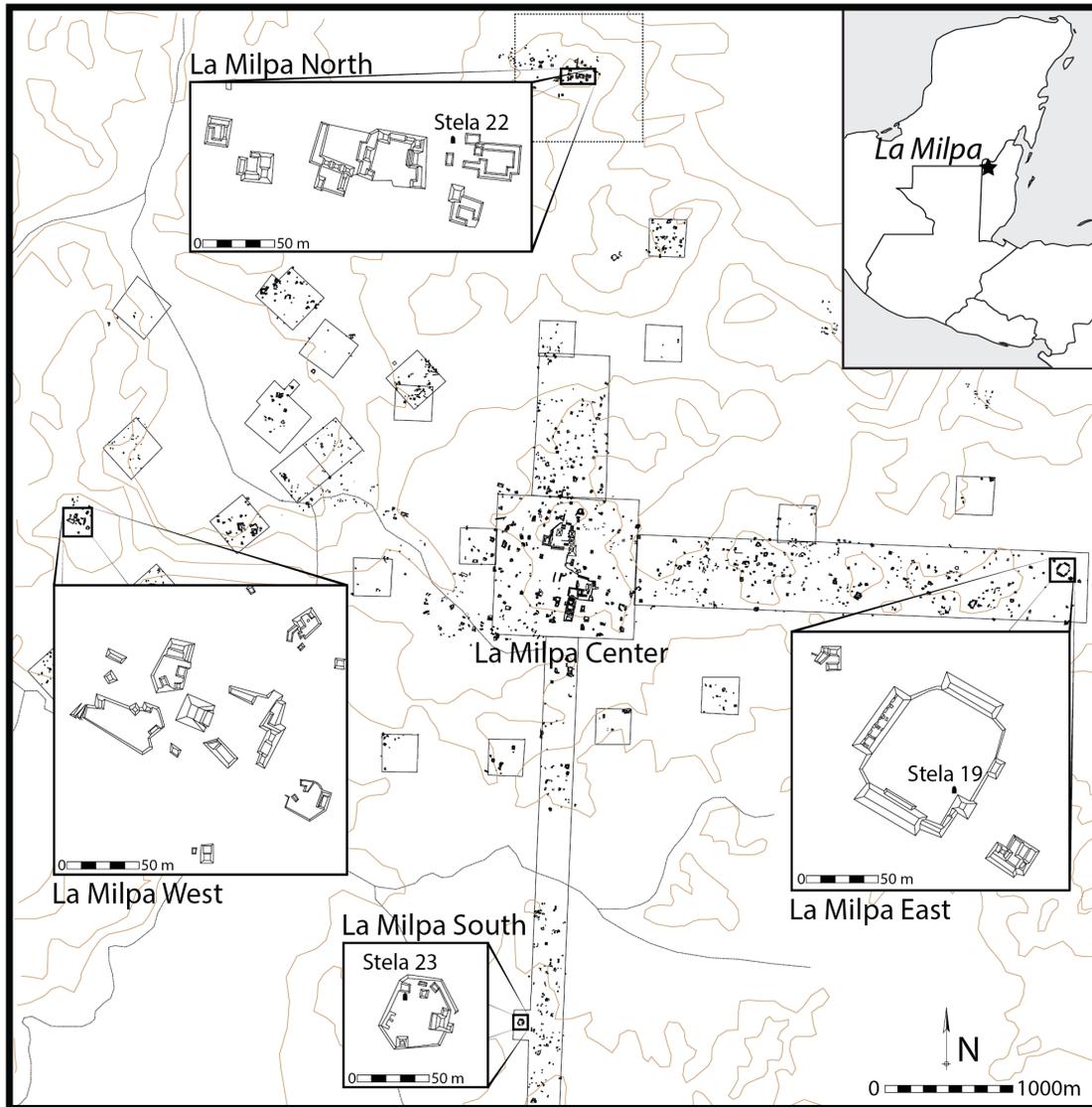


Figure 0.1. The La Milpa Cosmogram as proposed. Map by author, using GIS data available at www.bu.edu/lamilpa.

Although using ancient cosmologies and architectural expressions thereof to relocate entire new sites is a provocative new approach, the methods and interpretations of Tourtellot and colleagues (2000) are not uncontroversial. Conventionally, a successful interpretation of cosmological ideation in ancient settlement patterns requires multiple lines of evidence generated and tested via scientific methods, and are usually presented as

tentative interpretations (Ashmore & Sabloff, 2002, 2003; Smith, 2003, 2005). Tourtellot et al. (2000, 2003) based their interpretations of the cosmological significance of these sites solely on their position on the landscape. While the pattern of settlement on the landscape may often offer a promising line of evidence that supports Tourtellot et al.'s (2000, 2003) interpretation, particularly when dealing with the type of ceremonial architecture found at LME, LMS, and LMW, it constitutes only one single line of evidence. This assertion is somewhat problematic because civic planning, whether centralized or organic involves attention to multiple concerns related to social relations, geography, environment, economy, constraints of engineering, historical factors, and others, which interact in the creation of the built landscape (see Ashmore and Sabloff 2003).

Given the many factors involved in civic planning, some scholars have questioned what modern observers are capable of 'seeing' in ancient civic plans (Smith 2003, 2005). Carl (2000) for instance, claims that all built landscapes are constructed in a dialogue between symbol and praxis, and in rare cases, are centrally planned. Therefore, overarching principles of civic design in accordance with an idealized "city image" are present only under certain circumstances. Even when structuring concepts are present however, they remain secondary to the needs of praxis in prehistoric cities, as praxis is the essential basis of all order in civic patterning (Carl 2000). In addition, Michael Smith (2003, 2005) argued that even if ancient peoples did build according to cosmological models, of which he is very skeptical of in instances where written records are not

available, archaeological methods and theories are insufficient to detect ideational models in civic plans amid the noise of practical concerns and organic development.

Furthermore, Smith (2005) argues that actively searching for cosmological ideation in the archaeological record is fundamentally problematic, given that researchers may risk imposing their own biases on the data.

Smith (2005) has levied a substantial critique toward Tourtellot and colleagues' (2000, 2003) La Milpa cosmogram hypothesis. Smith (2005) argued that in this case, the methods employed contrast with those outlined by Ashmore (e.g. 1991; Ashmore and Sabloff 2002), whose empirically grounded approach and use of multiple lines of evidence transcends speculative interpretations. Smith (2005:220) states that, in the absence of textual evidence or a more-rigorous and empirical approach, ancient architectural cosmograms are more likely “modern phenomena, invented by scholars to satisfy their desire to reconstruct ancient cosmology from fragmentary evidence.”

I agree that Smith's (2003, 2005) argument is valid, and that it is necessary to support any claims of cosmovision in architecture and settlement plans with multiple lines of evidence. Cosmological ideation and expression is difficult to detect in the archaeological record as discerning central planning in the built environment requires an abundance of evidence and the development of a wide comparative base (Ashmore, 1991; Ashmore & Sabloff, 2003; Smith, 2007). Inferring symbolic meaning from ancient built environments requires strict adherence to processes of hypothesis testing, methods development, open discussion, and understandings of systems of belief established

through a range of sources (Ashmore 1989). By these standards, Smith (Smith 2003, 2005) levies a powerful critique of Tourtellot and colleagues' (2000, 2003) La Milpa cosmogram hypothesis. In the absence of multiple lines of evidence, interpretations regarding ancient ideation or systems of belief are contingent on new data. Interpretations of this kind can be provocative, generate discussion, and promote research but are also tentative; an exploration of a possibility amidst a broad array.

To move forward with the La Milpa cosmogram hypothesis, addressing the critiques levied by Smith is of utmost importance. If these secondary centers do constitute a cosmogram, La Milpa would be an archetypical example of ancient Maya cosmological ideation rendered through the pattern of settlement on the landscape on a community-wide scale, in an ideal quincunx aligned with great precision to the cardinal directions.

Testing the la Milpa Cosmogram Hypothesis

In the absence of textual sources, inferring cosmological ideation from archaeological assemblages can be problematic. As previously discussed, there is no single set of indicators that imply cosmological functions to a building, site, or network of sites. Rather, such inferences are the products of interpretation given the limited and fragmentary evidence of the material record. Therefore, I opted to conduct a general exploration of La Milpa North through a biography of place framework to reconstruct, as thoroughly as possible, the lives of past actors who were intimately familiar with the site and attempt to address the potential meanings they may have assigned to their places and

landscapes, cosmographic or otherwise. Over the course of this research program, three lines of evidence emerged in support of a cosmological interpretation of La Milpa North.

The first major indicator that La Milpa North held cosmological significance to the people of La Milpa during the Late and Terminal Classic periods, is that this site served as residence of politically powerful individuals, which links them to an established pattern in which such individuals tend to inhabit places located outside of site centers and in cosmologically significant locations relative to the site center (e.g. Tsukamoto et al. 2015). This line of evidence is more thoroughly explored in Chapters Six and Seven of this dissertation. The second and more direct line of evidence is a standing stone monument, La Milpa Stela 22, a plain stela placed between Structure 3301 and 3303 and erected sometime during the Late Classic, amidst the first major phase of construction at La Milpa North's core. As discussed below, the presence of such monuments at three of the four outlying sites of the proposed cosmogram, and the possibility of a similar arrangement at the site of Wari Camp in the Three Rivers Region, suggest a pattern related to boundary making and marking, which for the Maya was and continues to be a practice enmeshed in cosmological concepts. Finally, the presence of a possible *sacbe*, or formalized causeway, connecting the public architecture of La Milpa North to both the central precinct of La Milpa and to the ritual center of Tzak Naab to the north, may link the site to a well-established practice of ritualized movement in cosmographic patterns for the ancient Maya.

Stela 22 as a Boundary Marker

Stela 22 is a plain, free-standing celtiform stone located on the La Milpa North hilltop, directly west of the northern edge of Structure 3301, and to the north of Structure 3306 (Figure 0.2, 5.4). Measuring 150 cm x 85 cm, with a maximal thickness at its base of 35 cm. Interpreted to be a stela, this monument was placed in a form-fitted slot cut directly into the hard limestone shelf at the apex of the hilltop and braced with packed construction fill. The presence of exclusively Tepeu 2 ceramics in the construction fill suggest that the placement of Stela 22 occurred during the Late Classic (700-800 AD), in the same phase when monumental-scale construction began at La Milpa North. Considered in exclusively in this context, the placement of Stela 22 would not appear particularly unusual given that many elite residential compounds have associated monuments. There are however, two main pieces of evidence that suggest this monument served a special function on the social landscape of La Mila, the first being the presence of stelae at other cosmogram sites, and the second being the presence of a very similar monument at the same position on the landscape at Wari camp (Levi 2011).

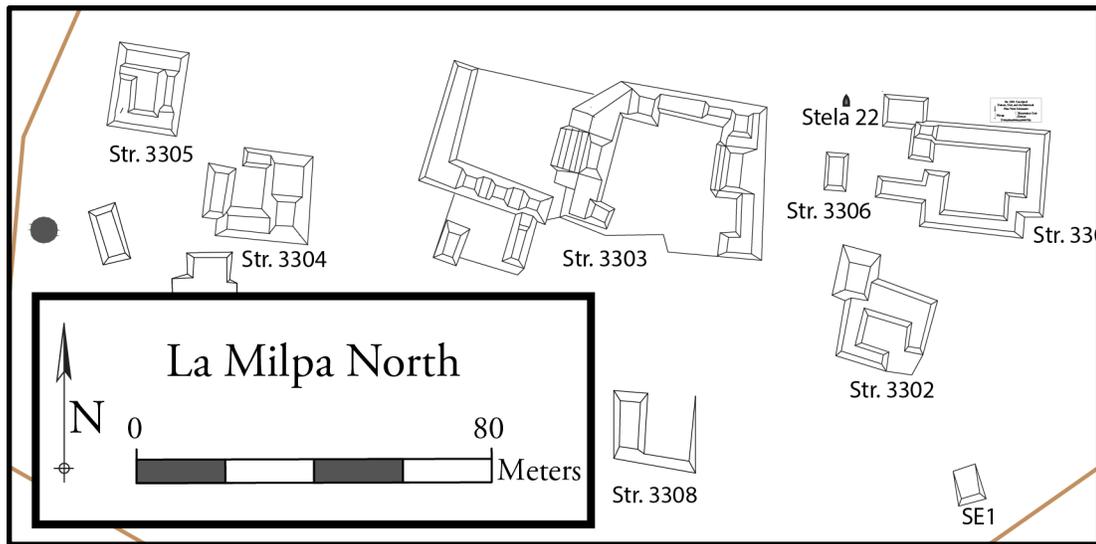


Figure 0.2. Placement of Stela 22. Map by Author.

In addition to Stela 22, researchers have documented additional plain stelae at other sites of the proposed La Milpa cosmogram (Hammond et al. 2014). La Milpa South and La Milpa East both contain plain a single plain stela (Hammond 2001; Hammond and Tourtellot 1999), and while no stela has yet been located at La Milpa West, the possibility of the presence of a monument at that site cannot yet be eliminated, given that La Milpa West appears to have been undergoing major renovations at the time of abandonment (Hammond and Tourtellot 2004) and has not been subject to extensive horizontal excavation. The presence of stelae at three of the four sites of the proposed cosmogram may suggest a ritually engineered connection, or the use of physical elements and practices on the landscape to establish relationships between disparate places, among these locations on the social landscape (see Houk and Zaro 2011a). I argue that, as part of a unified program, these stelae served as community boundary markers that define the

idealized boundary, arranged on the landscape in a cosmographic pattern because of practices in which communities were arranged according to a cosmological charter.

Hilltop stelae are often argued to have served a boundary marking function. For example, Arlen and Diane Chase (1993) argue that a hilltop plaza group to the south of the main group of Caracol that contains four plain stelae represents a southern boundary marker. In addition, scholars have posited that the dedication of monuments on an east-west axis on hilltops in the Copán Valley established a perimeter around Classic Period Copán (Morley 1946:144–46; Schele andLooper 2005).

The geographic position on the landscape of the La Milpa cosmogram stelae resembles the cruciform pattern often replicated in Mesoamerican cosmological expression, not unlike cross shrines (Christie 2005) and boulder piles (Taube 2003) placed at the boundaries of present day Maya communities. In her examination of modern Maya cross shrine rituals, which incorporate movement from the periphery to the center as well as circumambulation, Jessica Joyce Christie (2005) finds many symbolic overlaps between cross shrines and stelae, and proposes that stelae may have had a similar function in prehispanic eras by defining the limits of civic space. Christie's argument is bolstered by ancient mesoamerican ontological connections between stelae and celts (Porter 1996), which are often cached in cosmographic patterns (Estrada-Belli et al. 2003; Taube 2000, 2003, 2005) or contain cosmographic imagery inscribed within them (Reilly 1995; Taube 1996, 2000). I would add that perhaps cardinally oriented boundary stelae placed at peripheral locations might have been conceptually and functionally similar to

cosmographic celt cache. These stelae may have cosmologically centered the community through similar ritualized processes as caching objects in a cruciform pattern (Hammond et al. 2014), in which the placing of celts and other objects in a cruciform pattern in subterranean served as a means by which people both expressed and reified the shape of the universe and their position within it (Estrada-Belli et al. 2003; Mathews and Garber 2004).

In addition, a stela from the site of Wari Camp has interesting implications for the interpretation of Stela 22 as a boundary marker. The Wari Camp stela, located by Laura Levi (2011) on a hilltop roughly 3.5 km north of the major center of Wari Camp, ten kilometers to the east of La Milpa. This stela has virtually identical morphological characteristics to La Milpa North's Stela 22 (Levi 2011)(cf. Figure 0.3 and Figure 0.4). Interestingly, the Wari Camp hinterland stela is not located adjacent to large architectural arrangements, and cannot be directly associated with a particular household, further implying that it served a unique function on Wari Camp's social landscape. Similar morphological characteristics and locations on the landscape relative to site centers may suggest that these monuments share comparable functions as boundary markers and processional waypoints for their respective communities, a pattern perhaps replicated throughout the region.



Figure 0.3. Wari Camp Northern Satellite Stela. Image adapted from (Levi 2011).



Figure 0.4. La Milpa Stela 22. Note similar morphological characteristics to the Wari Camp Northern Satellite Stela. Photo by author.

La Milpa North Causeway Hypothesis

An essential component of ancient Mesoamerican civic design and boundary marking practices is the use of ritual performances involving the movement of large numbers of people across the landscape in prescribed patterns according to a cosmological charter (Reese-Taylor 2002). Therefore, we may expect that a site with a cosmological function would contain specially designed spaces for the execution of such rituals.

I hypothesize that La Milpa North contains a causeway that connects the site to the major center of La Milpa to the south and to the hinterland ceremonial site of Tzak Naab to the north. An otherwise unbuilt portion of the landscape of La Milpa North, between Structures 3303, 3304, and 3305, appears to have been artificially modified. In this area, three tiers or steps form an L shape just to the west and north of Structure 3303. The L-shaped tiers in the landscape connect with the western edge of the Northern Platform. Along this pathway is a modest sized platform connected to the western edge of the Northern Platform. I posit that this area represents a portion of a causeway running north-south through La Milpa North (Figure 0.5). From this causeway, both the northern and southern sides of Structure 3303 could be accessed via other avenues of movement, including one that may have connected Stela 22 to the main north-south throughway (Figure 0.6). The close association with Structure 3303 is significant because the architectural arrangement of this structure, in that it contains sufficiently large plaza spaces, suggest a more public function than the other structures of La Milpa North.

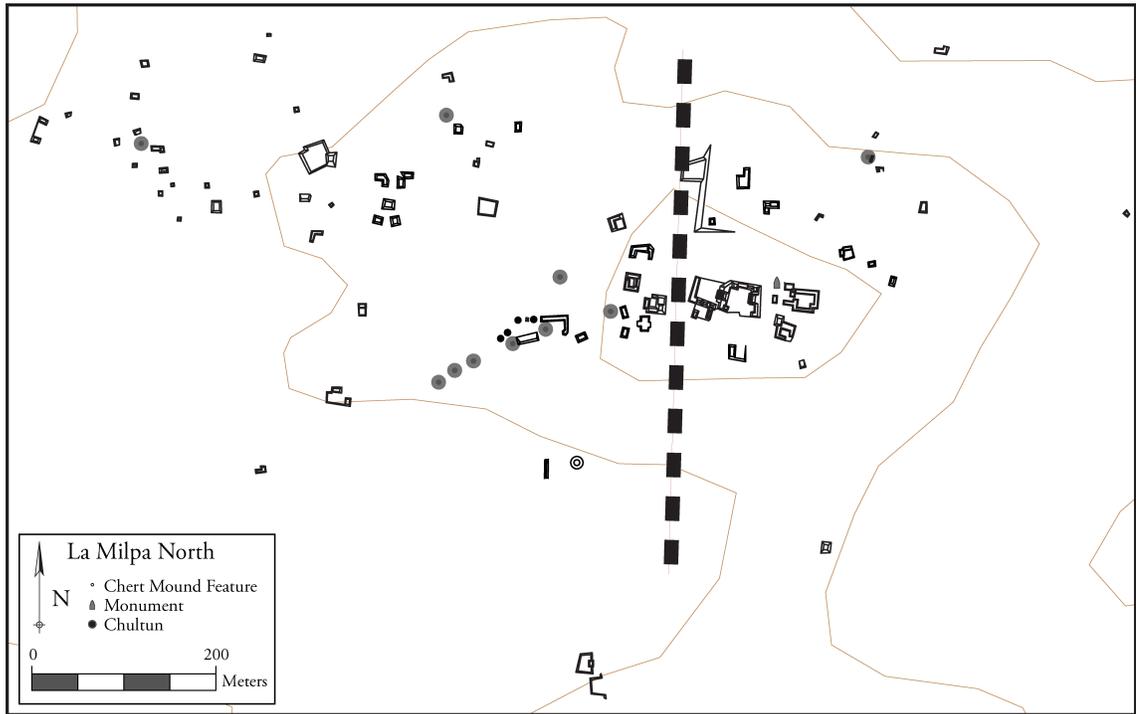


Figure 0.5. Route of the proposed Northern Causeway connecting La Milpa North to La Milpa and Tzak Naab. Map by author.

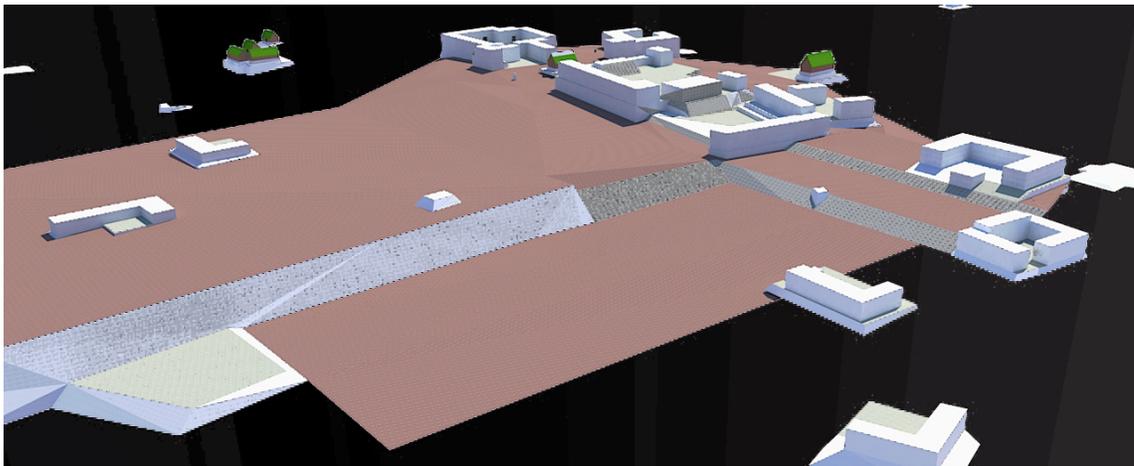


Figure 0.6. Artist reconstruction of the La Milpa North Segment of the proposed Northern Causeway as viewed from above and to the northwest. Render by author.

In addition, the possible causeway segment at La Milpa North appears to have been designed to create a visual experience that unfolds through moving through the space. In the present day, as one travels this portion of the proposed causeway, moving southward starting at the platform that abuts the Northern Platform, the site of La Milpa is completely hidden from view. As one continues south and ascends the three-tiered formation in the landscape to the west of Structure 3303, at the second step the trees atop La Milpa Temples 1 and 3 suddenly come into view. In the Classic period, it is likely that the tops of these temples could be viewed at this point, which would have been an impressive sight. I argue that this portion of La Milpa North was modified to construct this experience and lend a sense of grandeur to the journey toward La Milpa center.

Together with Anastasia Kotsoglou (Kotsoglou n.d.), I propose that this causeway terminates at the site of Tzak Naab, a ceremonial center on the western edge of the Dumbbell Bajo (Figure 0.7). Tzak Naab is built upon three ascending artificial tiers supporting large unenclosed plazas. The major features of the site are arranged along a distinct east-west line tapering down towards the Dumbbell Bajo, located immediately to the east. The highest elevation tier, Tier A, culminates in a large plaza with an area of over 4,300 square meters, a space that could comfortably host more than 4,000 individuals (see Inomata 2006). Tier A is topped with two major structures. Structure A-1 is a rectangular, stepped, pyramidal feature topped by a vaulted masonry superstructure, similar in form to other temple shrines in the Maya region. Two lower platforms were placed at the center and eastern edge of the plaza, and likely served as components of a

larger performance program. The horizontal area of the plaza supported by Tier B is more than double the size of Tier A. Structure B-1 there has two shallow steps ascending to a platform measuring more than 3 meters across. Like the structures of Tier A, Structure B-1 was also likely used for public performances and connects Tier B to Tier C via a large, pyramidal substructure inset into the eastern edge of the tier.

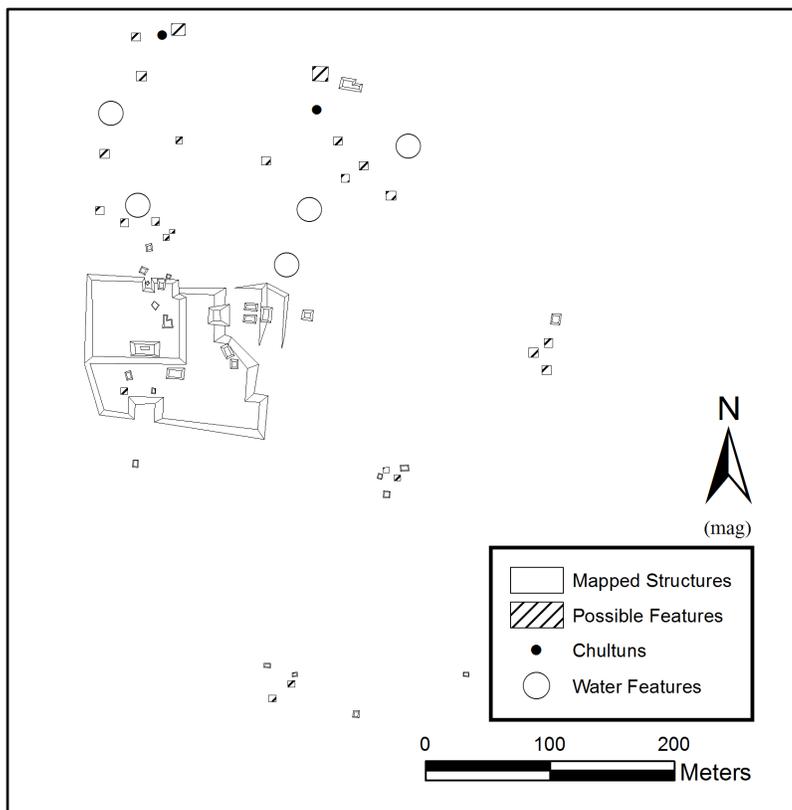


Figure 0.7. Map of Tzak Naab. Map by Anastasia Kotsoglou.

The evidence for Tzak Naab having served as a causeway terminus is presently likewise limited to the topography and arrangement of features on the landscape at Tzak Naab, which appears to have architectural arrangements consistent with causeway termini (Figure 0.8). The area to the south of Tiers A and B was likely the primary access point to

the public gathering areas of Tzak Naab. A group of platforms frame the approach to the site and may represent the terminus of a causeway connecting Tzak Naab to La Milpa Center. We believe this causeway bisects the site of La Milpa North, the residence of a powerful elite household located 1.5 km to the southeast. A ballcourt located on a hilltop between the two sites may have also been a waypoint along the route we propose (Figure 0.9).

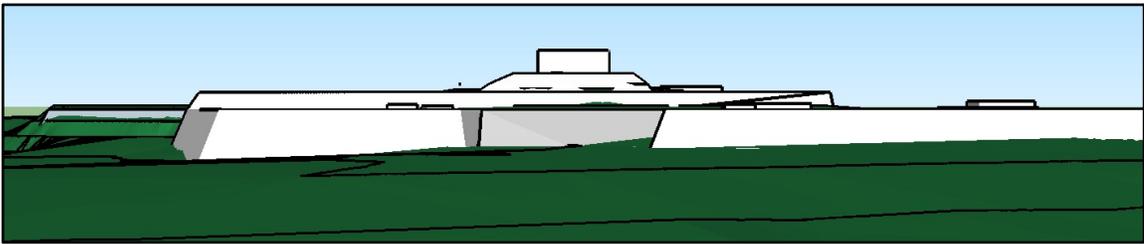


Figure 0.8. View from the proposed causeway terminus at Tzak Naab, from south of site looking northward. Render by author.

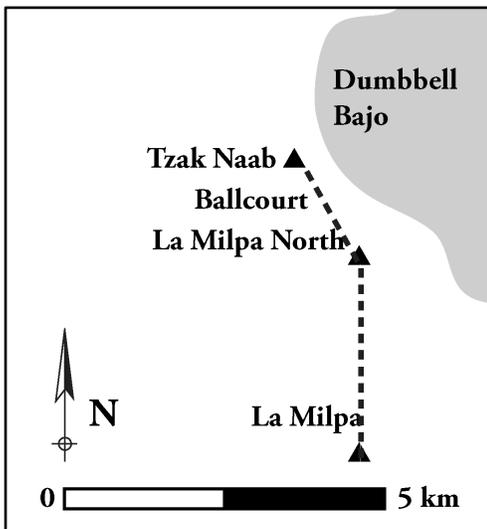


Figure 0.9. Schematic route of the proposed Northern Causeway. Map by author.

In considering the embodied experiences of these processional participants, Kotsoglou and I argue that the architects of Tzak Naab integrated its built environment

with the ‘unbuilt’ but cultivated spaces of the *bajo* through movement and vision.

Approaching along the proposed causeway route, processional participants would first have encountered a series of four low-lying platforms that frame Structure A-1. This experience unfolds hundreds of meters to the south, where the natural lay of the land and the height of A-1’s superstructure and B-1s platform are intervisible to the pathway along a lengthy section of the processional route.

As of this writing, we consider the existence of this causeway provisional pending further investigation, which is currently ongoing. If this causeway hypothesis can be validated however, these elements together would represent a variation on a common theme in the construction of major centers; the linking of ideologically important spaces by road, which often serve as processional thoroughways for community-wide ritual practices. Involving large numbers of participants, such rituals were essential to reproducing senses of community identity, communicating ideological information, and re-centering the polity within the cosmos. While much work remains to be done, data gathered thus far suggest the strong possibility of a this causeway, a feature on the landscape that can be closely linked to the practice of rituals with cosmological significance (Keller 2006).

The Copan Cosmogram: A Comparative Example

Allan Maca (2002, 2006) has proposed that a network of five U-shaped groups, all dating to the Late Classic period, constitute a quadripartite cosmogram that surrounds and defines the urban community of Copán. Maca’s hypothesis provides a resource for a

comparison between the La Milpa Cosmogram, as proposed by LaMAP (Tourtellot et al. 2000, e.g. 2003), and the Copán example. This comparison provides a valuable means of analysis in support of the La Milpa Cosmogram Hypothesis.

Maca's (2002, 2006) hypothesis is based both on the location of five U-shaped groups on the landscape in a cruciform pattern and the ostensibly intentional change in orientation between the groups. Maca (2002, 2006) notes that the western and eastern U-groups are oriented towards the north and south respectively, while the northern and southern U-groups are oriented towards the rising and setting sun. The final U-group, marking center and completing the quincunx pattern, is situated in the Great Plaza of the Principal Group. Maca (2002, 2006) argues that these sites may have served as processional points in counterclockwise circumambulation rituals, known from ethnographic and ethnohistoric sources (e.g. M. D. Coe 1965; Vogt 1993), as the orientations of the individual outlying U-groups rotate clockwise as one moves from point to point in a counterclockwise manner. Furthermore, a plan view of Copán demonstrates that a line drawn between the northern and southern points on the proposed cosmogram directly intersects with Structure 4, the radial pyramid at the heart of the Great Plaza (Figure 0.10). Maca (2006) argues that this is not coincidental, as the monument is itself cardinally oriented, inferred to be a calendrical cosmogram linked to the motion of the sun, thereby integrating both space and time. The role of this Structure 4 as an important marker of center is reinforced by the presence of Stela A on its basal platform. This stela portrays the ruler *Uaxaclajuun Ub'aah K'awiil*, dressed as the sun

god at zenith and contains inscriptions that reference the integration of the Maya quadripartite and multilayered world through a series of cardinal directional references associated with ritual practices (Maca 2006; Newsome 2001a:179).

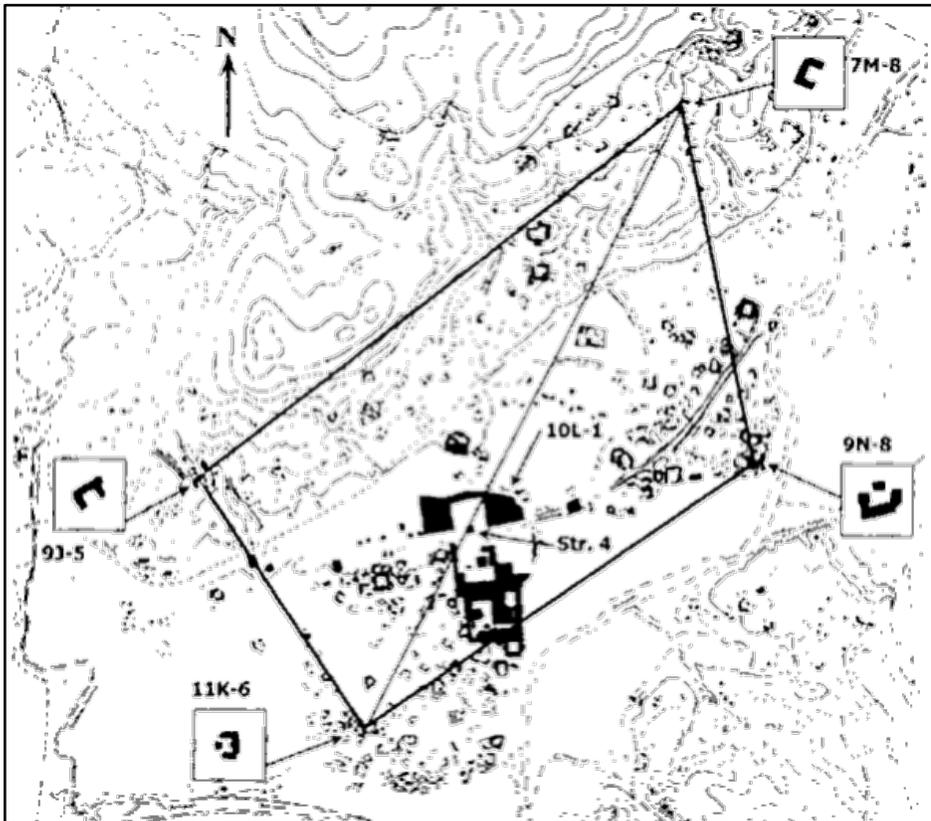


Figure 0.10. The Copán Cosmogram as proposed by Alan Maca. Map adapted from Maca (2006).

Taken as a model, the Copán cosmogram illustrates several critical components to cosmological expression in large-scale community wide cosmographic civic plan. Firstly, the U-groups are not isolated structures. Rather, they are attached to and associated with other architecture, perhaps permitting multiple uses of these spaces when not ritually active. In addition, precise orientation of the cosmogram to the astronomical or true cardinal directions appears to be secondary to the concerns of geography, community, and praxis, though they do correspond well with ancient Maya cosmological models. In

addition, all five points on the cosmogram fall within the U-group typology and therefore share a similar architectural plan with evidence of a cohesive and integrative design. The northern, southern, eastern, western and central structures integrate and emphasize the four world directions through shifting orientations. Movement between sites in circumambulation also appears to be a critical component, given the clockwise rotation of the U-groups when experienced in a counterclockwise sequence. Finally, the center point is defined by a direct line between the northern and southernmost components of the cosmogram and is well marked by the built environment.

The Copán model aligns fairly well with the La Milpa Cosmogram with a few essential disjunctions. At La Milpa as is the case at Copán, the eastern, western, and southern sites share a fundamental pattern in their form. La Milpa East and La Milpa West also seem to fit into a coherent design pattern, as they are each skewed approximately 30 degrees off of astronomical cardinal directions possibly to be more closely oriented towards the winter solstice sunrise and summer solstice sunset respectively (Tourtellot et al. 2003). La Milpa North however, possesses a unique architectural plan as compared to the other cosmogram sites, and therefore does adhere to the Copán model. The other point of departure between these two models is that there is no firm demarcation of a central position in the La Milpa cosmogram, which leaves the most important point of reference unelaborated.

Variances with the Copán model suggest alternate possibilities for a La Milpa Cosmogram. For instance, the substitution of La Milpa North for the site of La Milpa

North Chico, a hilltop semi-enclosed pyramid plaza group aligns more precisely with the Copán model. La Milpa North Chico and the other cosmogram sites conform to similar architectural plan and therefore the substitution of this site for La Milpa North better aligns with the Copán model, in which similar architectural configurations are a prominent feature. In addition, these four sites appear to incorporate counter-clockwise circumambulatory movement in their design. La Milpa East is oriented roughly toward the winter solstice sunrise, the strong eastern orientation of La Milpa North Chico may evoke the sunrise at equinox, La Milpa West's orientation shifts back toward the summer solstice sunset, and La Milpa South returns to the strong eastern orientation that may once again evoke the equinox (Tourtellot et al. 2003). When experienced in a counterclockwise fashion, these sites trace the path of the sun on not only its daily journey from sunrise, to zenith, to sunset, to nadir, but also its annual motion across the eastern and western horizon.

In addition, a direct line between La Milpa North Chico and La Milpa South intersects with a third pyramid plaza group situated just north of the great plaza of La Milpa on the highest natural hill adjacent to La Milpa's site center (see Figure 0.1). If La Milpa North Chico was the northernmost position of the cosmogram, then the fifth point of the quincunx, marking center, was in fact elaborated through an architectural design that echoes the other cardinally oriented sites. This elaboration included not only a semi-enclosed plaza and pyramid, but also a shrine situated in the center of the pyramid-plaza group, which incidentally, appears to share a similar directional orientation as the

imaginary line between the northern and southern points of the cosmogram. Perhaps this shrine reinforced the connection to the northern and southern sites through its orientation and served as a position from which to evoke or conjure the world tree that connects the three tiers of the universe.

Comparisons between the Copán cosmogram, as proposed by Maca (2002, 2006), and the La Milpa cosmogram complicates my examination of the La Milpa cosmogram hypothesis. While I argue that La Milpa North certainly held cosmological significance, as a boundary marker, center of administration, and waypoint on a possible northern causeway, La Milpa North Chico appears to be the more likely candidate for a purely ritual cosmogram in the form proposed by Tourtellot and colleagues (2003), which argues that the cosmogram was intentionally designed by royal authority to serve as a polity-scale ritual circuit to integrate the community and emphasize the centrality within the universe of La Milpa's rulers. Instead, La Milpa North appears to extend power away from the center and into the hinterlands by providing palatial spaces for the operation of state agents well-outside of the central precinct, while simultaneously emphasizing and fortifying the formal boundaries of the La Milpa polity.

Further complicating matters is that the "cosmogram" that surrounds La Milpa appears to have never been reached what we would expect to be its final form. La Milpa West appears incomplete without a finished plaza surface, which is perhaps why a monument has yet to be located within that center. Stela 23 overlies a thin horizon of Late Classic ceramics, suggesting that it may not yet have been set at La Milpa South.

Stela 22 at La Milpa North appears to have been erected, but Structure 3303, the most likely candidate for ceremonial functions, was remodeled significantly in the Terminal Classic (Tourtellot, personal communication 2014), and as the outcome of that effort remains unclear, it too may prove to be unfinished in light of further excavation.

Rather than be deterred by the incomplete nature of the La Milpa Cosmogram, I view this as a situation one is likely to encounter when attempting to discern boundaries at the community level through the archaeological record. As much as intentional design can be observed on ancient landscapes, so too can the political, social, and material realities of praxis (e.g. Ashmore 2010; Carl 2000). Civic designs and their implementations must contend with pre-existent social, political, economic, and physical landscapes, and therefore we can expect them to be imperfectly realized.

In both the Copan and La Milpa examples, the secondary centers that constitute the proposed cosmograms were remodeled in the Terminal Classic, at a time when political authority was weak relative to their apogees. Perhaps transforming these secondary centers to integrate them into a broader cosmological pattern for use in community wide rituals was strategic. Rulers, struggling to maintain authority in a period of political decentralization, may have decided to commit resources to projects that established formalized boundary spaces and venues for community-wide rituals that increase community integration while reifying the cosmic centrality of major centers. At La Milpa, this strategy may have involved both La Milpa North and La Milpa North Chico as cosmologically significant centers, the former as a political cosmogram,

representing the idealized boundaries of the polity and the latter as a component in ritual cosmogram which better reflected the shape of space and time.

In my view, the boundary established by the La Milpa Cosmogram delineated the idealized, but not functional, extent of the La Milpa urban settlement. While settlement pattern data is limited beyond La Milpa Archaeological Project's survey transect, preliminary data from the XWAP survey at La Milpa North and elsewhere suggests population density remains quite high outside of boundaries established by the cosmogram. This may suggest the existence of a border zone, a place where people felt the presence of La Milpa's political authority, participated in its networks of social relations, and identified closely with the center, all while living beyond its formalized ideational boundaries.

At La Milpa North, this border zone and its resultant ambiguities, contradictions, and conflicts may have been resolved by making use of a nearby ballcourt on a hilltop to the northwest of La Milpa North. Ballcourts on the peripheries of settlements may be places for the resolution of disputes between communities and are associated with ritualized rain-bringing activities. The ballcourt in question is placed so that it overlooks the Dumbbell Bajo, which was likely essential to La Milpa's political economy but was located on the margins of the city itself. This suggests that in some ways, the *bajo* may have been a contested space, or alternatively, its productivity was a concern for peoples in the center, on the borders, and beyond.

Conclusions

Responding to the critiques levied by Smith (2003, 2005) regarding whether or not the La Milpa cosmogram is the product of ancient ideation and action or modern observational biases is a difficult problem. There is no single marker or line of evidence at La Milpa North or the other sites of the proposed cosmogram to confirm the existence of the polity-scale cosmogram. Instead, we must rely on other more circumstantial pieces of evidence; for example, the arrangements of secondary centers on the landscape, the possible boundary marking stela, the possible *sacbe*, and the presence of a palatial compound which has strong indicators of political authority through its specially designed spaces for the conduct of state business (Chapter 8). While as a whole I find these data supportive of the cosmogram, the comparative study between the La Milpa and Copán cosmograms leave plenty of room for alternative interpretations if we are to argue that La Milpa North was established as first and foremost as a cosmogram site. Nevertheless, these data strongly support a cosmological meaning having been applied to the site, even if that may not have been the primary impetus for construction of La Milpa North's palatial architecture. It is possible that even in the absence of an intentional program to construct cardinally oriented ritual centers, the ancient Maya of La Milpa nevertheless understood La Milpa North as a northerly place through indirect means. Other practices, such as boundary marking and the positioning of non-royal elite residences on the landscape (Chapter 8), which were interpreted and carried out through

cosmological charters, likely conferred a cosmological significance to the site of La Milpa North.

Chapter 6: Practices of Production: Political and Ritual Economy at La Milpa North

Introduction

As a palatial elite residence and ceremonial center, residents of La Milpa North and Xaman Witz were enmeshed in complex networks of economic relations in the Terminal Classic. This chapter examines the political economic practices of the La Milpa North palace and the surrounding community from a ritual economic lens (Chapter 2). This approach acknowledges that economic activities for the ancient Maya were subject to unequal power relations and held deeply symbolic and ritualistic components. In addition, this perspective considers that social, political, and ritual performances often require physical items that must be procured, produced, and circulated. Furthermore, the daily practice of these economic activities has profound implications in the realms of social and political statuses and identities.

This examination of the political/ritual economies of La Milpa North and Xaman Witz includes an analysis of both local relations of production and palace provisioning as well as regional and inter-regional patterns of exchange that are discernable from the site assemblage. Specifically, this chapter examines the relations between La Milpa North, the palace, and Xaman Witz, its surrounding communities, as well as the relationships between this locality and distant areas in which trade goods, ultimately deposited at La Milpa North, were procured. Finally, this chapter briefly outlines the effects of the daily practice of economic activities on social status and identity.

Political Economic Relations Between La Milpa North and Xaman Witz

Among the most basic economic questions that can be asked about the relations between a palace and its immediate social landscape relates to the provisioning of the former. Palaces have unique economic requirements that involve interrelations between the palace occupants and their surrounding communities. As a rule, elite palace residents hold specialized occupations and were not engaged in full-time subsistence production. Indeed, the residents of Structure 3301 appear to have multiple specialized occupations that do not involve direct agricultural production, including the production goods for elite consumption. These include cloth, shell, and ceramic production (this chapter), political administration (Chapter 8), and supervising the labors of others (this chapter). Although the level of palace involvement in direct subsistence production is unknowable in any final sense, what is certain is that the palace residents interacted with places and people outside of their immediate environs to meet the economic demands of the household.

Palace Provisioning

Given the perishability and weight of most foodstuffs, water, and other products necessary to the course of daily life, it is likely that the majority of goods consumed by palace occupants were locally produced and processed. Unfortunately, XWAP has generated only limited information pertaining to subsistence agriculture, food processing, and water management activities. There are however, some preliminary hints at the processes involved in palace provisioning. These include some probable agricultural terraces of the northern slope of the Xaman Witz hill, a large drainage located to the

south of La Milpa North, and a dedicated kitchen space attached to Structure 3301 Temple 1.

Agricultural Terracing

The northern slope of the Xaman Witz hill, on which La Milpa North is situated, appears to be terraced in the portion between the Northern Platform and the Dumbbell Bajo. While not mapped in detail due to time constraints, these terraces are apparent when walking this portion of the site. Their placement on the landscape is unsurprising given the frequent appearance of such features on the margins of *bajos* in the Maya lowlands (Beach et al. 2002; Dunning et al. 2002; Kunen 2001). For instance, this pattern has been identified within the Three Rivers Region at the Far West Bajo (Kunen 2001), separated from the Dumbbell Bajo only by the narrow ridge on which Tzak Naab is situated. The products and purposes of these terraces are presently unknown, but their close proximity to La Milpa North suggests they were controlled by the dominant elite lineage that occupied the palace. The logical possibilities for what may have been produced in this space would include either production of foodstuffs or inputs for craft production, such as cotton. These inferences however are entirely speculative and require further investigation to validate.

Southern Drainage

The means by which potable water was acquired is presently unknown, though traces of this processes made their way into the archaeological assemblage. Notably, three partial water jars were found in-situ arranged against the south wall of the structure

3301 entryway, possibly a result of having been left in places where they could collect runoff from the roof of the structure.

Another candidate for a water storage feature is a depression on the western slope of the Xaman Witz hill. A shovel test pit was placed in the approximate center of this feature and excavated to bedrock. This yielded no evidence of a surface preparation or any attempt to seal the depression to make it capable of holding water, as is the case in other water storage features in the region (Scarborough et al. 1995). The standing interpretation of this depression feature is that it is a limestone quarry for the purposes of producing building materials, and not a water management feature (see Ibid).

A more substantial source of water would most likely have been at the base of the southern slope of the La Milpa North hill, where drainage could have collected water from the surrounding slopes. In the present day, this portion of the landscape is used to collect and store water for cattle, having been modified by the creation of a small circular berm. In antiquity, it is feasible that the entire drainage could have been closed off with such a retaining wall, but no traces of that endeavor exist today – possibly the result of modern land clearance practices.

Structure 3301 Room 7: Kitchen

Food preparation had multiple significances to a palace and its residents. All members of a palace require meals. In addition, the social status of palace residents was likely contingent on social gatherings, many of which likely had feasting activities as core components. Therefore, the maintenance of physical bodies and status within social

bodies required the provisioning of prepared food. Room 7 is the likely candidate where such food preparation activities occurred (Chapter 4) (Figure 0.1).

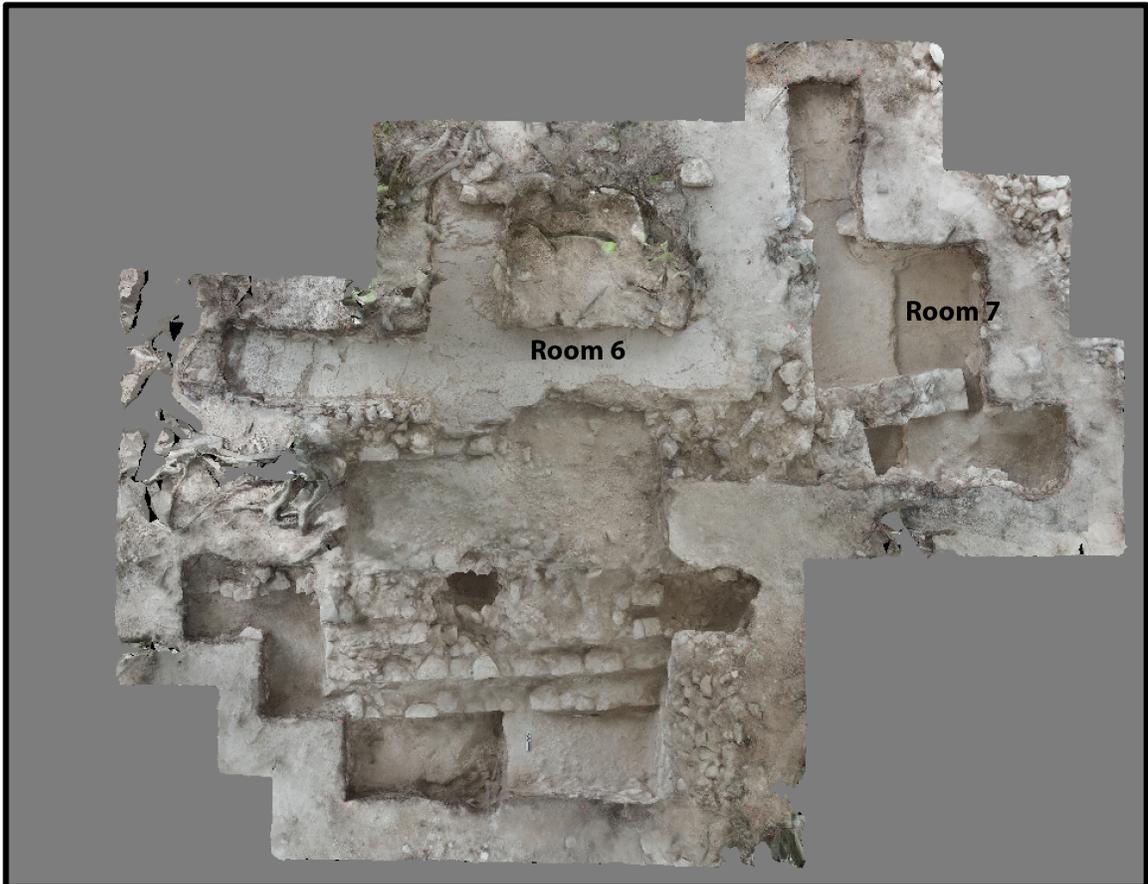


Figure 0.1. Orthographic photo of Rooms 6 and 7. Render by author.

The placement of this feature in relation to the main residence of this palace appears to be in line with what is known about palace kitchens in the Maya lowlands. For instance, structure M7-9 at Aguateca, Guatemala is a kitchen placed on the north side of a main residence within a palace group (Inomata et al. 1998), a pattern that matches the La Milpa North kitchen quite well. The reasoning behind this pattern placement is not known, but Mongelluzzo (2011:65–66) suggests that kitchens may be located outside of

the residences they serve because of either religious reasons or to limit the access of those who actually do the cooking to the interior of complexes, as they may not be of sufficient status to enter the private courtyards of the palace as they please.

That regular access to the Structure 3301 Courtyard, in performance of their responsibilities, to the persons who used the kitchen attached to the palace does tentatively suggest a differential social status to those who worked and lived within the residence. Despite the differences in social status, it is nevertheless possible to infer a degree of social connection between those who prepared the food and those who consumed it. Whether they were food preparation specialists attached to the household that controlled Structure 3301 or lower-status members of the household is unclear (see LeCount 2010:152). The close proximity of the kitchen area to the primary palatial residence and the interactions that preparing and serving food would likely have necessitated close interpersonal relations between food preparers and consumers of those products.

Bajo Margin Agriculture

The proximity of La Milpa North to the Dumbbell Bajo raises questions as to the extent the palace and its residents were involved in productive activities occurring within and around this potentially productive space. This *bajo* was likely increasingly important to the political economy of La Milpa as the economic shift of the Classic period unfolded, reducing the amount of unoccupied but arable land available for outfield agriculture (see McAnany 1995:74). As previously noted in this chapter, a series of terraces connect the

palace compound to the margins of the *bajo*, so some degree of interest in the productivity of this space may be inferred.

The La Milpa North hilltop afforded visual access to much of the Dumbbell Bajo and the elevation and palatial architecture of the site ensured privacy for palace occupants. This offers the elite of La Milpa North insight into the activities of groups within their viewshed while restricting reciprocal access to those groups (see Hutson 2002; McGuire 1992:207). This constitutes power over the observed, a distinctively passive yet effective form of social discipline exercised over the activities of those subject to surveillance (Foucault 1977).

I suspect that surveillance of the *bajo* was of utmost importance. In addition to being the northern boundary of the La Milpa polity, the Dumbbell Bajo likely provided substantial agricultural potential and access to raw materials and was therefore a key resource on the political economic landscape of the entire La Milpa polity (see Dunning et al. 2002, 2006). The exact role the residents of La Milpa North remains unknown, but the positioning of the palace compound high above the surrounding landscape suggests the possibility of substantial involvement in the activities occurring within and around that space.

Lithic Production

Lithic production was an important part of the political economy La Milpa North. The Xaman Witz hill contains chert deposits, a relatively rare resource that occurs in isolated pockets. Lithic workshops are often located adjacent to raw material sources, and

this is certainly the case at the chert deposits found in proximity to the Dumbbell Bajo. La Milpa North has plentiful raw materials and a large workshop area, as does the nearby site of Bedrock, situated across the *bajo* to the north (Barrett 2004).

The La Milpa North workshop however, is a multi-structure affair, comprising several distinct work areas. These include several structures in Group SW1 and SW2, part of a complex manufactory process involving several work areas where different components of a unified lithic production process occurred. An east-west oriented platform, situated within Group SW2, on the west side of La Milpa North, contains two large piles of raw chert nodules placed on either end of the structure. To the north of that platform lie five distinct heaps of chert materials, broken and burned, plausibly by fire to clear the land in recent history. In addition, a flake scatter was located downslope from the two platforms of Group SW1, adjacent to the west side of the palatial compound. Suboperations, 3-A through 3-D were placed in this latter area. Suboperation 3-A located a dense horizon of lithic materials, including microdebitage, on top of the northern platform, suggesting involvement of this structure in lithic production (Moholy-Nagy 1990). Suboperations 3-B, 3-C, and 3-D excavated portions the lithic scatter area, which had probably eroded downslope from the aforementioned platforms, and was found to be a thin but dense deposit (Figure 0.2).

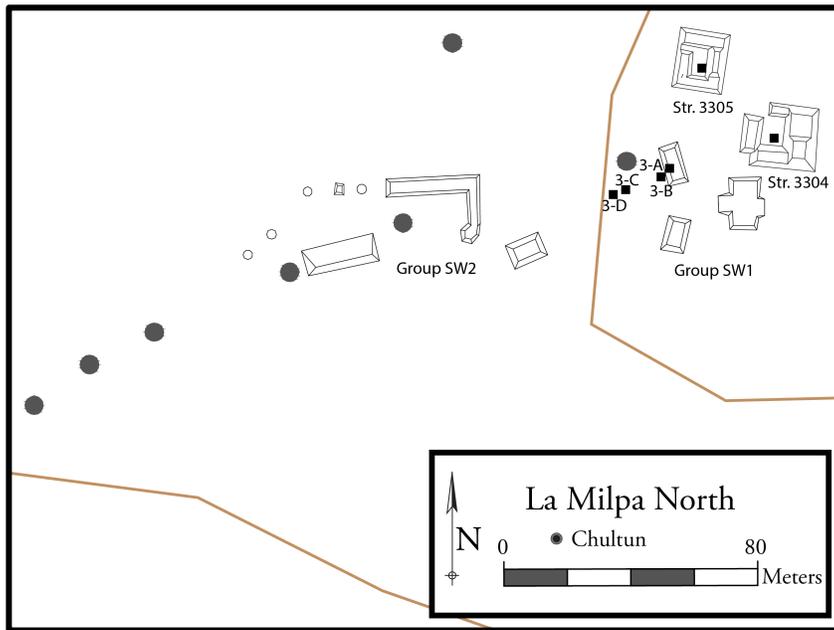


Figure 0.2. Lithic Workshop Area. Map by author.

Theresa Heindel analyzed the lithic assemblage from Operation 3-A through 3-D, and determined the stage of the reduction process occurring in this area (Heller et al. 2015). In all, 1,871 lithics were analyzed, and 1,801 were found to be flakes or flake fragments. No nodules were found, and chunks and shatter comprised less than 2% of the assemblage, while less than 1% could be categorized as formal tools or expedient flakes. Of the analyzed flakes and flake fragments, none were completely covered in cortex nor did any have less than one flake scar. Among flakes 86% had no cortex at all, and 86% had three or more flake scars, while 70% of flakes contained prepared platforms (Appendix 2). These data suggest that this deposit represents specialized, late-stage tool production, most likely of general utility bifaces, implying that earlier stages of reduction occurred elsewhere (ibid).

While additional research is required to determine the exact function of other identified areas, the presence of chert materials in Group SW2 and final stage reduction occurring in SW1 suggests that discrete segments of a lithic production process were distributed across the western portions of the immediate La Milpa North landscape. If this was the case, then individuals acquired chert nodules and deposited them in a location where they underwent primary stage reduction. Subsequently, prepared cores were brought to the platforms adjacent to the palace compound where specialists performed late stage reduction. Costin (1991:30) argues that, “the more highly structured the organization of production (e.g., into workshops or factories), the more highly organized the space in which those activities took place should be,” and I argue that this is the case at La Milpa North.

This lithic production process involved labor of disparate kinds and at various levels of skill, with workers and their labor distributed at distinct points across the landscape. For example, quarrying, gathering, and stockpiling suitable materials, testing those materials for quality and creating prefabricated cores, and final stage tool production, all of which required different levels of competency, occurred at purpose-built locales within a larger workshop complex. This is in contrast to the other known workshops at and near the site of Bedrock, which while associated with the architecture of hinterland elite households, appear to be concentrated around a single platform where all stages of lithic processing appear to have occurred (see Barrett 2004).

At La Milpa North's workshop, individual workspace sites are not associated with a particular household, with the exception of the palace compound itself. This suggests that labor was drafted from the surrounding community and organized, probably by members of the extended La Milpa North household, who likely controlled the products of that labor.

The consolidation of lithic resources and production processes under the auspices of elite households is a well-established practice by the Early Classic in Northwestern Belize and unequal access to these resources continues through the Terminal Classic (Barrett 2004:295). Unevenly distributed across the landscape of this region, and lithic resources appear are largely under the domain of elite lineages, a process which likely contributed to the establishment and reproduction of economic and social inequality (Ibid).

Palace Production at La Milpa North

Working within elaborate residences, high-status individuals painted vessels, carved precious materials into exquisite objects, and crafted the intricate garb required for the expression of elite identities and ritual performances (McAnany 1993). In fabricating and utilizing these objects, members of the ancient Maya elite also produced and reproduced social and economic difference relative to other members of their communities (McAnany 2010:191). Although finished status-enhancing products were often essential to the performative legitimization of social difference (Trigger 2003:89),

the practices of craft production were both materially and socially transformative processes (Hirth 1996; Pauketat 2001).

Rising awareness of the complexity of ancient Maya socioeconomic organization and increasing attention to households as loci of production has led to new understandings of the structures and practices of production within elite households (Gillespie 2000b). Evidence for household production of status-enhancing goods within high-status residences is uncommon however, as this form of production utilized valuable materials that were frequently consumed in production processes (Inomata 2001b). Further complicating the matter is that production of this kind generally occurred within interior spaces, subject to sweeping and other forms of cleaning during occupation and prior to abandonment (ibid).

At La Milpa North abandonment occurred over a period in sufficient length in which people were able to retrieve caches, perform termination rituals, and leave the site peacefully. There are no significant traces of violence at the site and excavations found that rooms within La Milpa North Structure 3301 were abandoned in a variety of conditions. Rooms 2 and 3 were probably swept clean prior to abandonment, as no artifacts were found in situ within the room. Room 5 contains small traces of human action just prior to abandonment in the broken fragments of things deposited in this room, within the fire that burned on the east side of the Structure 3301 courtyard, and perhaps at other significant but unknown locations (see Tsukamoto 2017). Room 1 on the other hand, appears have been relatively undisturbed by processes of abandonment. In this

space and given the exception of perforation in the floor in the southwest corner of the room, the remains of a shell workshop appear to have been left *in situ*. This set of very fortunate depositional circumstances provides significant information regarding the economy of La Milpa North.

Structure 3306 – Cloth Workshop

At La Milpa North, excavations yielded evidence for elite craft production at Structure 3306, a low-lying mound situated between two of the largest structures at La Milpa North. Excavations on the west patio of this structure yielded marine shell, obsidian blade fragments, red and yellow ocher pebbles, and a hematite object (Heller 2011). On the northern patio of the structure, finds included obsidian blade fragments, and ceramic disk and alabaster spindle whorls, suitable for spinning cotton and possibly other materials (Kamp et al. 2006) into products of various qualities, including the manufacture of both course and fine threads (Brumfiel 1996; McCafferty and McCafferty 2000). Materials from the west patio suggests that artisans may have ground and mixed marine shell, hematite, and a variety of ochers to produce a specular dye (Beaudry-Corbett and McCafferty 2002), likely applied to the textiles produced on the north patio or within the structure itself to create garb suitable for elite costuming, ritual performance, tribute obligations, or other purposes.

Given the assemblage, it is likely that cloth was produced at Structure 3306 with the aid of a backstrap loom (see Brumfiel 2006) (Figure 0.3). Unfortunately, backstrap looms are composed of primarily perishable materials that do not generally preserve in

contexts like those present at Structure 3306. Therefore, their presence must be inferred from non-perishable implements associated with weaving, such as needles, spindle whorls, and fine cutting tools, many of which were found around the exterior of this structure (Brumfiel 2006; Chase et al. 2008).

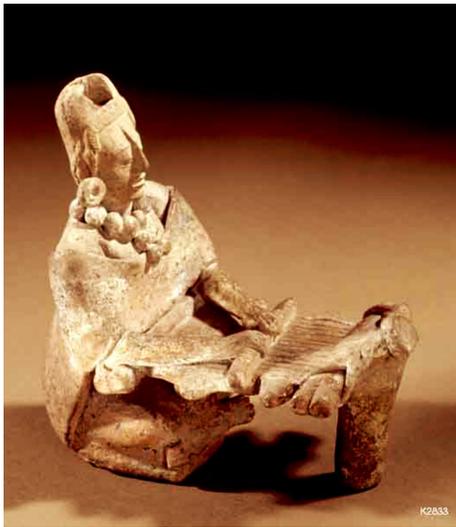


Figure 0.3. Jaina figurine depicting a high-status Maya woman and a backstrap loom. Photograph by J. Kerr (k2833).

At Structure 3306, producers had access to both coarse and fine threads (see Brumfiel 1996; McCafferty and McCafferty 2000), plentiful high-quality cutting tools, and a range of dye materials. Therefore, I infer that the quality of the textiles produced here was also quite high. Given the known assemblage, the producers here had the capacity to craft brightly colored cloth in red and orange tones that could have had a slightly specular quality to them. I argue that, because of the fine textiles produced here, production was exclusively oriented for elite exchange and consumption. It is most probable that a substantial portion of the goods fashioned within and around Structure 3306 was consumed locally by members of the principal household at La Milpa North.

These items may have been utilized as everyday wear, costuming for special functions, consumed in ritual performances, and exchanged as tribute.

Structure 3301 Room 1 - Shell Workshop

Excavations within Structure 3301 Room 1 yielded further evidence for elite craft production in the form of a shell workshop. Shell object production is common to elite workshops in the Maya region throughout the Late and Terminal Classic (e.g. Cobos 1994; Emery and Aoyama 2007; Freidel et al. 2002; Velázquez-Castro 2012).

As discussed in Chapter 4 of this dissertation, a variety of tools including three drills of various diameters, scrapers, possible hammerstones, grinding implements, and blades were found in association with shell objects, in various stages of completion. The diameters of the distal ends of the drills are roughly consistent with the diameters of the perforations in the shell objects, indicating that craftspeople employed the former in the production of the latter. In addition, raw iron oxide, a likely pigment component, was also located within this room. The oblong shaped river cobble, a probable grinding implement that contains both evidence of chipping and grinding, appears to be stained red on the grinding portions, presumably as a result of processing iron oxide into a fine powder. The exact function of the other tools is presently unknown, but they could be used for wide variety of tasks involved in shell carving. The tools, raw materials, and unfinished and broken shell objects of this assemblage strongly suggest that production of shell objects and red pigments occurred within Structure 3301 Room 1.

Structure 3301 and 3306 as Components in the Production of Adorned Regalia

The Structure 3306 and 3301 assemblages are consistent with those observed in cloth, shell and bone workshops within elite households across the Maya region (Chase et al. 2008; e.g. Cobos 1994; Emery and Aoyama 2007; Inomata 2007). When both assemblages are considered as possibly part of a single production process, the overall assemblage strongly resembles that of Group 9N-8, Copan, Honduras, an elite compound argued to be the location of a specialized workshop oriented toward the production of elite apparel, wherein both fine cloth and shell are produced in close proximity to one another (Hendon 1997; Widmer 2009). Given the similarities between the La Milpa North and Group 9N-8 assemblages, elites of La Milpa North may have also engaged in the production of high-status adorned regalia.

Regional Exchange Relations

In addition to organizing the labor of the local community, the people of La Milpa North enmeshed themselves in regional exchange relations that procured finished goods and raw materials from distant locations. Evidence for regional and interregional exchange relations is found primarily in the acquisition of tools and materials used in processes of production. Such items include obsidian from southern Guatemala, granite from central Belize, and shell from the Caribbean Coast.

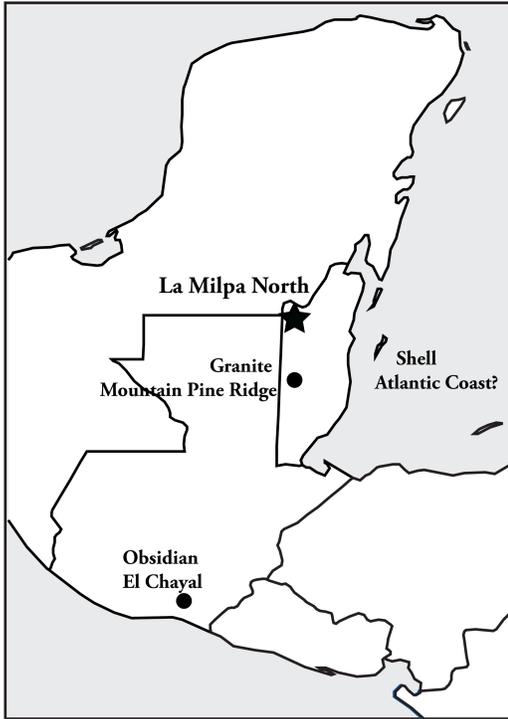


Figure 0.4. Map of the major sources of non-local goods. Map by author.

Obsidian occurs only in geographic areas in which volcanic activity occurred, therefore obsidian tools must be imported and are often manufactured at their point of distribution, far away from the original source (Hirth and Flenniken 2002). Portable X-Ray Florescence (pXRF) analysis found that the majority of obsidian blades found at La Milpa North chemically matched obsidian samples from the El Chayal source in southern Guatemala, with only a single blade, of the 17 tested, originating from the Ixtepeque source in south eastern Guatemala (Beckwith 2013:95) (Appendix 3)¹. This pattern is consistent with the Late to Terminal Classic source distribution of obsidian artifacts in the Three Rivers Region (Beckwith 2013:99). This indicates that the primary means by

¹ Additional obsidian blades were visually sourced by Dr. Rissa Trachman, but the results of that effort are not yet available.

which obsidian was imported to La Milpa North, and the Three Rivers Region was by overland trade in the Late to Terminal Classic, though some limited exchange via coastal trade routes also continued (see Hammond 1972).

Like obsidian, granite does not occur in the geological strata of northwestern Belize and must be imported. The numerous groundstone implements located at La Milpa North, in the form of manos and metates were chemically sourced, again using pXRF to Mountain Pine Ridge in the Maya Mountains of central Belize (Tibbits 2015) (appendix 4). Despite variances in context and visual attributes, such as color or the presence of pyrite inclusions, these sources were consistent across the site as well as between La Milpa North and Dos Hombres (Tibbits 2015:147). This suggests that the means by which granite was transported and exchanged at this site as well as other sites in the region were shared. Due to the nature of the material, being exceptionally heavy and therefore difficult to transport, it is most likely that these implements were imported in their finished form. They may have originated at workshops at Pacbitun, in central Belize, a site adjacent to the Mountain Pine Ridge granite source that contains the only known Classic period granite workshop in the Maya region (Ibid).

Given the inland location of La Milpa North, marine shell had to be imported from coastal regions. Presently, the species of the shell used in the production of adornments that occurred within Structure 3301 Room 1 is unknown, but preliminary visual analysis suggests that species of conch common to the Atlantic coast are the most likely candidates. Worked shell artifacts are not uncommon in elite burial contexts and

middens in and around La Milpa beginning in the Late Preclassic and continuing through the Classic period (e.g. Hammond 1996; Houk and Valdez 2011; Sullivan and Sagebiel 2003). Despite the uncommon occurrence of marine shell in the broader Three Rivers Region assemblage, little is known about the exchange relations that supplied shell workshops in this region with raw materials. Nevertheless, it is clear an exchange network connected La Milpa North to coastal regions.

In sum, goods imported to La Milpa North, as both finished products and inputs for local manufacturing practices, demonstrate connections to the highlands of Guatemala, coastal Belize, and the Maya Mountains during the Late to Terminal Classic. While these connections are interesting in their own right, what is perhaps most telling is the similarities that La Milpa North shares with other locations in the Three Rivers Regions, especially the major centers of La Milpa and Dos Hombres. Although the sample size and scope of this project are not large enough to address questions regarding differentiation in exchange relations between La Milpa North and other regional centers, the emerging pattern is one of shared access to similar goods sourced from like places as elsewhere in the region.

Implications of Production and Exchange at La Milpa North

Patterns of production and exchange at La Milpa North was a significant part of life within and outside of the palace compound. As practices that interdigitate with aspects of people's lives beyond the quotidian or material, acts of production and exchange have implications that go beyond rigid definitions of economics. These include

the shaping inter- and intra-community relations, articulations with ritual practice, and forming critical components of social identity.

La Milpa North as a Resource-Specialized Community

Although the scale of lithic production at La Milpa North remains to be determined, evidence tentatively suggests that this site may have been instrumental in providing stone tools to specialized *bajo*-margin agricultural communities that otherwise lacked access to chert resources and the specialized knowledge required to produce finely crafted finished tools. This relationship may be similar in form, but certainly not scale, to the exchange pattern identified by Patricia McAnany (1986) between the *bajo*-margin communities of Pulltrouser Swamp and the lithic producing center of Colha, and at sites in the Three Rivers Region in the Classic period (Scarborough and Valdez 2003, 2009). In this model, population density and circumscription decrease access to the diverse array of resources necessary to reproduce the community. In response, communities specialize in the exploitation of a small number of resources and engage in short-distance intercommunity exchange to meet their needs. As population densities increase, a corresponding increase in interdependence and resource specialization of communities occurs.

La Milpa North, though occupying a relatively privileged position in the regional political economy, was nevertheless subject to the same economic forces. I argue that in order to reproduce their status, the inhabitants of La Milpa North exploited chert resources to produce and exchange finished lithic tools for other goods to communities

where chert resources were scarce. Barrett (2004) makes a similar argument for the nearby site of Bedrock, on the northern edge of the Dumbbell Bajo, and such patterns of exchange have been found on a much larger scale at Colha, in Northern Belize (Hester and Shafer 1984; Shafer and Hester 1991). La Milpa North's access to chert resources and the specialized skill sets of its residents and attached specialists may have enabled this resource specialized community to gather and expend the material and social capital necessary to sustain the palace through the Late and Terminal Classic (see McAnany 2010:184; Scarborough and Valdez 2009).

In addition, production of elite goods occurring within the confines of the palace compound may also articulate into the resource specialization model. In this case however, several key resources, e.g. shell) had to be imported. Therefore, in the case of palace production, access to trade networks and the specialized skillset required to transform raw materials into finished goods is subject to scarcity.

Ritual Economy of La Milpa North

As discussed in Chapter 2, ritual economic theory acknowledges both the material nature of ritual performance and the ritualized aspects of production in ancient Maya contexts. From this perspective, several critical elements of the productive processes in operation at La Milpa North may be elucidated. These include the nature of shell and pigment production that occurred in Room 1 as well as the use of the adorned regalia produced across both Structure 3306 and 3301. In addition, it is possible that the social value of products crafted at La Milpa North was enhanced by not only the social status of

its producers but also by the fact that the point of origin of these products was a significant location on the ritual landscape of La Milpa.

One of the most prominent architectural features of Room 1 is the bench that spans the northernmost section of the room. This bench contained a niche placed on its center line (Chapter 4). Niches are common loci for ritual practice in ancient Mesoamerica (e.g. Chase and Chase 1998; Kunen, Galindo, and Chase 2003). The niche inset into the Structure 3301 Room 1 bench was likely a focus of ritual activity, an inference bolstered by the presence of a reddish stain on the upper portions of the niche, possibly the result of burning materials within.

The production of status-enhancing goods, in this case possibly elite garb adorned with shell and other materials, in a space that includes architectural elements dedicated to ritual practice, is best understood from a ritual economics perspective. Within Structure 3301 Room 1 the presence of the niche in the northern bench suggests that production of shell, pigments, and other objects was a practice with ritualized elements. At minimum, it occurred within a space with ritualistic associations, though it is quite possible that ritual practices were actively ongoing as part of the production process.

In addition, the products resulting from production occurring within Structure 3301 Room 1 were also likely used for performative purposes. At minimum, these items, donned by elite members of Maya society, are bound to the reproduction of elite identities, which is itself a performative act. They may have been however, also worn

during the performance of political duties or religious rituals (see Schele and Miller 1986:66).

If this was the case (see Chapter 8), then the ritualized acts of elite persons producing regalia to be worn under exceptional circumstances may have increased the social value of the garb. Likewise, the production of items at a cosmologically significant location may have increased the social value of items produced. The multiple possible sources by which social value was imbued into the production process suggests that each item of regalia produced at La Milpa North possessed rich and layered meanings and associations.

Women and the Production of Elite Status and Elite Identity

The ancient Maya predicated social and political status on an ideology in which some lineages enjoyed privileged positions within cosmologically constructed hierarchies and thereby maintained preferential access to supernatural forces. Nevertheless, elites engaged in the reproduction of their elevated social status through interaction with the material world. From the modification of their bodies to the construction and inhabitation of elaborate domiciles, elites strategically leveraged the corporeal to project social difference in ways that naturalized and reproduced ideological social differentiation. Two essential forms of expressing, reproducing, and legitimizing social difference were the hosting of elaborate ritual performance and public gatherings (Stockett 2007), often oriented toward agricultural fecundity and involving food, and through the adornment of the body. Iconographic and archaeological evidence indicates that in the Late Classic, the

production of both feasting foods and cloth were primarily the domain of Maya women - activities provided avenues for the agency of women as well as their participation in political spheres which were otherwise often, but not exclusively (see Joyce 1993), the domain of men.

At La Milpa North, food preparation and cloth production were major components of social and economic life. The presence of women and their labors may be inferred from the material remains of a kitchen space in Structure 3301 Room 7 and a cloth workshop at Structure 3306. Interestingly, the evidence generated through excavation of these spaces show that the labor of women at La Milpa North directly articulates with the reproduction of elite statuses and identities.

Food Production

Cooking is a task that is commonly associated with women in Maya contexts from present day and into antiquity. Evon Vogt (1969:85) found that contemporary Maya household spaces in Chiapas, Mexico, are organized by gender, including a female side of the home in which cooking hearths and implements are found – a pattern echoed in the organization of households and household labor in Classic Maya contexts (Marcus 2004) though gendered divisions of space may break down in daily practice (Hendon 1997). Classic period art occasionally depicts the processing and serving of food and drink for consumption at important gatherings, and frequently women, including women of high-status, are shown as the preparers and servers of food (Joyce 1993; LeCount 2010:135–36).

Although women were primarily responsible for food processing as well as many other aspects of sustenance production, dietary reconstructions show that they may not have had equal access to food consumption, particularly ritually important protein sources throughout the Classic period (White 2005). Nevertheless, the preparation of food and drink consumed in ritual practice was a source of social status, avenue for political power, and constituent of identity for the women who oversaw and participated in its production (Hendon 1997; Joyce 1993; White 2005). At La Milpa North, food preparation was likely a key component to political and ritual events, and the preparers of that food, who were most probably women, engaged in important components of that process.

Cloth Production (Str. 3306)

In Classic Maya contexts, the production of woven cloth may be strongly associated with social status. It is commonly viewed as the purview of elite women of the Mesoamerica in Classic and Postclassic periods, though this is not exclusively the case (Ashmore 2002b; Brumfiel 2006; Chase et al. 2008; McCafferty and McCafferty 2006:42). For instance, textile production implements are found in both youth and adult burials of both biological sexes in Classic Maya contexts (Welsh 1988 as cited in Halprin, 2008).

After production the circulation and consumption of dyed and woven cloth have important implications in ancient Maya society. Beyond expressing gender, other status markers were likely imbued in textiles, including markers of an individual's social

identity, as is the case in both archaeological and ethnohistoric contexts (e.g. Brumfiel 2006; Halperin 2008; Hendrickson 1995). Social identity and status are expressed and reproduced through the visual and material medium of bodily adornment, and textiles are an essential component of this process. Furthermore, elaborate garb was required for the successful enactment of both public ritual and political relations through the vehicle of tribute offerings.

High-quality textiles were vehicles for the production and reproduction of social status, essential components of ritual practice, and politically important as items circulated in elite networks of tribute and exchange. Therefore, I infer that the women of La Milpa North played essential roles in the region's political and ritual economy. While little information exists in the iconographic record regarding gender division of labor of other products involved in the production of adorned regalia, for example shell-working, I argue that it is possible that the final product required and amalgamated the labor of both men and women. The final result was twofold. Women and possibly men, worked alongside one another to produce fine finished garb for elite circulation and consumption, meanwhile they reproduced a set of social and political relations, gendered hierarchies, and senses of self.

Conclusions

Attention to practices related to production sheds light on myriad activities and actors at La Milpa North. The data presented and analyzed in this chapter most likely represents only a narrow moment in the history of the site, likely limited only to the

period just prior to its abandonment. Nevertheless, they shed light on complex interrelations between myriad social actors that occurred as part of the social and economic reproduction of the palace compound and to a lesser extent, the surrounding community.

In the Terminal Classic, a period of socio-economic disruption and stress, the household of La Milpa North Structure 3301 continued to produce food and craft status-enhancing goods through production processes that required exceptional skill and access to networks of exchange. This labor likely involved people who assumed multiple social roles and identities, including both women and men as well as people of differing social statuses. Meanwhile, residents of the La Milpa North palace also fulfilled roles as organizers and beneficiaries of the labor of the surrounding community as well.

Chapter 7: Construction of Embodied Experiences and Social Power Through Vision and Movement at La Milpa North

Introduction

As a palace compound, elite residence, and ceremonial center, the architecture of La Milpa North not only created suitable spaces for the daily practices of its occupants, it also communicated social variance. Ancient Maya architects built La Milpa North in an effort to deliberately direct vision and movement in ways that crafted particular experiences for visitors and occupants alike. I argue that these motile narratives, were intentionally encoded in the architectural plan of the palace compound, and are accessible to us, albeit partially, through careful considerations of site plans in the context of what is known about ancient Maya political authority and those who prominently wielded it.

This chapter explores some of the possible narratives encoded in the architecture of La Milpa North based on a digital reconstruction of experiential aspects of the landscape. This study is primarily informed by digital phenomenological tools, including site mapping, topography captured in a digital elevation model, and a 3D architectural reconstruction accessible in virtual reality space, I discuss several notable instances in which site plan appears to deliberately control movement and vision to reinforce the ideological claims to status and power of the occupants of La Milpa North.

Phenomenological Methods

As discussed in Chapter 2, the use of phenomenological analysis to construct archaeological inferences has a long and controversial history. Christopher Tilley (1994)

introduced the concept into archaeology as a means of understanding ancient actors as intrinsically embedded in a material world. For Tilley (1994), extrapolations of one's own sense of being in, and moving through, a landscape were gateways to narratives of past experiences that were not necessarily limited to what could be reconstructed based purely on empirical data. For instance, the relationships between embodied movement and practice and the transformation of spaces into places laden with social value and meaning may be revealed through attention to phenomenological data (Robin and Rothschild 2002).

The inherent subjectivity of phenomenological methods led to a number of substantial critiques. Foremost among these is that phenomenological analysis lacked rigor and was irreproducible, and was therefore a departure from more evidence-oriented archaeologies (Fleming 1999, 2006). Others argued that phenomenological inferences relied upon a certain degree of universality in human embodied experiences, which cannot be assumed given the tremendous potential for cultural/temporal differences in the ways embodiment and physical senses are perceived between archaeologists and their ancient subjects (Brück 2005). These critiques led researchers to increase the rigor of phenomenological methods and apply them in concert with other modes of archaeological investigation (Hamilton et al. 2006).

In addressing phenomenology's critics, researchers increasingly turn to digital technologies to increase the validity of experiential studies (Cummings and Whittle 2004; Golden and Davenport 2013). For instance, the use of GIS to precisely determine

viewsheds and intervisibility between locations on the landscape introduces a reproducibility that was lacking in early iterations of phenomenological research (e.g. Doyle, Garrison, and Houston 2012; Hammond and Tourtellot 2003; Landau 2015). Digital architectural reconstructions have likewise provided novel tools to explore relationships between sensory perception and built environments (Mongelluzzo 2011). Virtual reality allows portions of or even entire landscapes to be digitally reproduced, placing the user within virtual environments in which variables may be controlled and inferred experiences reproduced indefinitely (Eve 2012; Gillings 1999; Turner and Turner 2006).

Neither of these approaches fully overcome the objections levied by Brück (2005) as we cannot digitally alter our perceptions of space to better match those of ancient subjects, nor do such experiences tell us what meanings were derived. Nevertheless, they do offer the means to better appreciate both physical and social functions of the spaces we study. When considered within an analytical framework that includes our best inferences regarding ancient sensory perceptions and the meanings associated with them (e.g. Houston, Stuart, and Taube 2006; Houston and Taube 2000), as well as the cultural and quotidian patterns encoded in Maya social landscapes (e.g. Ashmore 1989; Ashmore and Sabloff 2002; Keller 2006; Mathews and Garber 2004) these approaches may offer additional fruitful avenues for the study of ancient places and landscapes from experiential perspectives.

XWAP used a combination of digital reconstructions and traditional phenomenological methods, (e.g. site walkthroughs) to facilitate the study of ancient experiences at La Milpa North. The digital reconstructions used by this project rely on a mixture of digital topographic mapping, photomodels captured from the landscape and architectural excavation units, and architectural reconstruction views based on my interpretation of the architecture of La Milpa North as known through excavation data, and surface survey (see Chapter 3). Digital structure reconstructions are low-resolution and intentionally quite rudimentary. Structure reconstructions represent only the basic shape of the structure and are only elaborated in circumstances where excavation data provides specific information regarding their precise form. These models were then integrated into a virtual reality environment to further explore virtual spaces. Traditional phenomenological methods were also used and rely on my own embodied experience of walking designated lines within the site or through the use of various observation points. These inferences were also compared to and studied in light of the extensive mapping, elevation modeling, and GIS work at the site and the two and three-dimensional representations that resulted from that effort.

What follows in the remainder of this chapter are the inferences generated from the aforementioned sources. These inferences are not presented as “the truth”, as I can make no definitive claim to either the precision of my reconstructions or the validity of my inferences as applied to the actual experiences of the ancient Maya who built and occupied this landscape. Rather, these interpretations explore possibilities of what ancient

actors may have or could have experienced. In so doing, I endeavor to explore the relationships between particular features on the landscape and their significance to the people who interacted with them.

Movement, Vision, Performance, and Power

As a palace compound, the architecture of La Milpa North served primarily as a residence to an elite family and their retainers. Its function as an elite residence, however, was not limited to creating spaces suitable for habitation. Indeed, the compound fulfilled multiple social functions, including creating spaces for elite craft production (Chapter 6), political activities (Chapter 8), and the reproduction of social difference. The remainder of this chapter looks at the built environment as a vehicle for communicating information through the manipulation of human sensory perceptions. The palace architecture of La Milpa North site was designed and constructed for conveying information regarding the site's important location on the social landscape and the status of its occupants as a principal concern.

La Milpa Causeway Hypothesis

As previously discussed in Chapter 5, I hypothesize that a causeway connects La Milpa Center to the hinterland ritual center of Tzak Naab (Figure 0.1), bisects La Milpa North (Figure 7.0.2). Ritual circuits are known to be important to ancient Maya community integration, boundary marking practices, cosmological expression, and ideological statements of territorial control (Coe 1965; Reese-Taylor, 2002). Therefore, processional pathways are major components of ancient Maya civic design, which often

have multiple elaborated processional causeways each punctuated by various architectural features along their routes (ibid). At La Milpa center, causeways connect features between major precincts within the site core (Houk and Zaro 2011a; Tourtellot and Hammond 1998), but little is yet known regarding pathways that emanate from the center into the periphery of the site.

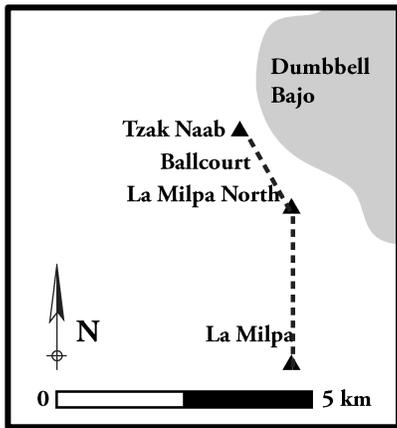


Figure 0.1. Schematized route of the proposed La Milpa Northern Causeway. Illustration by author.

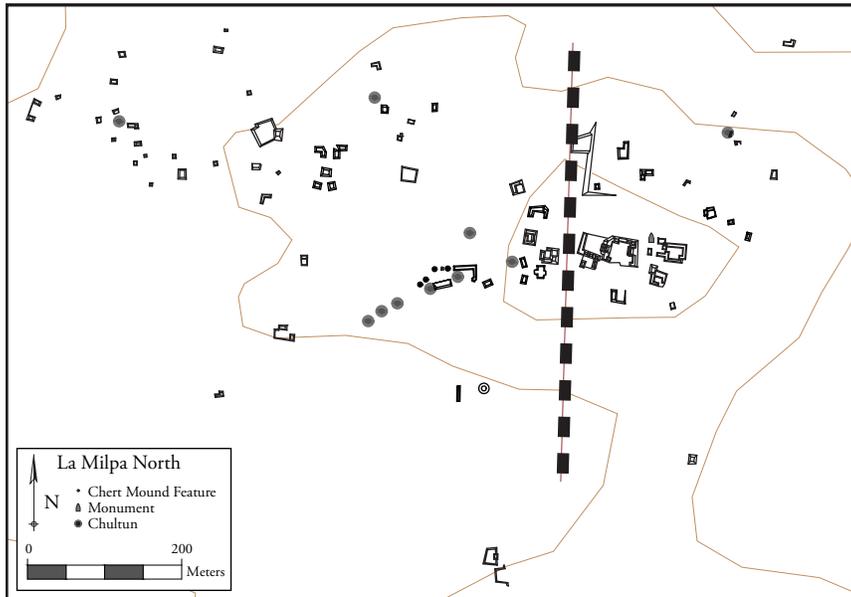


Figure 7. 0.2. Plan view of the proposed path of the La Milpa Northern Causeway through La Milpa North. Illustration by author.

The architecture that defines and abuts the proposed causeway is used to control the movement and vision of its travelers. Moving from La Milpa Center toward Tzak Naab, the intermediary waypoint of La Milpa North presents an impressive sight, a dense series of limestone masonry structures placed imposingly on the hilltop, visible for several kilometers, including as far away as the tops of the main temples at La Milpa. Ascending the hill toward the point where the causeway runs through the palace compound, the southern platform attached to Structure 3303, with its two limestone masonry structures angled slightly toward the causeway presented the first architectural engagement with those who walked this path (Figure 7.3). Additional platforms would be visible as one ascended the hill, though the eastern and western courtyard interiors of Structure 3303 are elevated or enclosed respectively and cannot be fully viewed from lower-elevation position on the causeway. After reaching the highest point of elevation and cresting the hill, a smaller platform that could accommodate only a single standing person, is proximate to the walker, while a much larger platform is situated downslope and abutting the western side of the Northern Platform. I argue that these two features, along with the Structure 3303 southern platform, are performance spaces likely used during ritual processions.

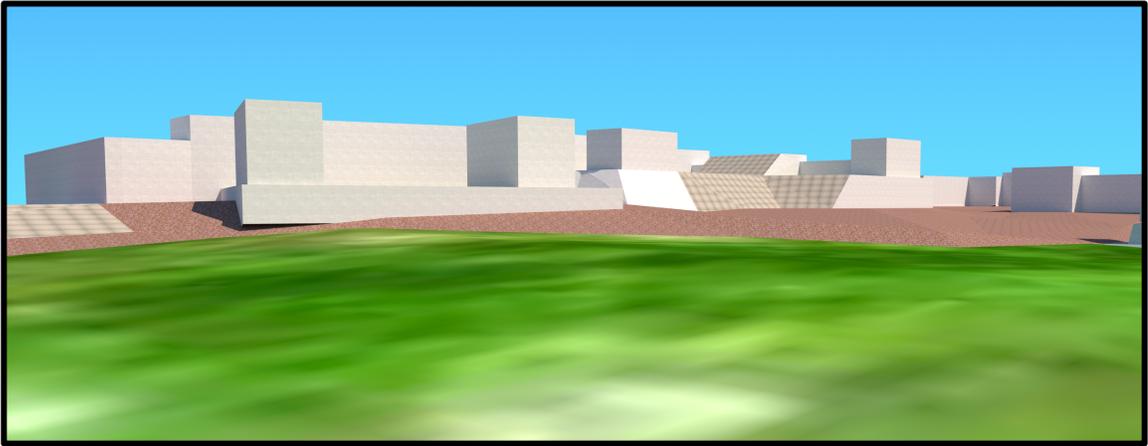


Figure 7. 0.3. The view of La Milpa North from the proposed causeway, looking northeast toward the site center. Render by author.

Moving along the causeway from south to north, the aforementioned causeway platforms come into play (Figure 0.4), accompanied now by the emerging view of La Milpa center on the southern horizon as one ascends the large, broad steps and crests the hill (Figure 0.5). Alongside the pageantry of the performances occurring on the various platforms, this view would create a strong visual connection to the site center and much of the northern portion of the La Milpa polity. This expansive viewshed would have highlighted the impressive scale of La Milpa, its highest structures visible across a vast and densely populated landscape.

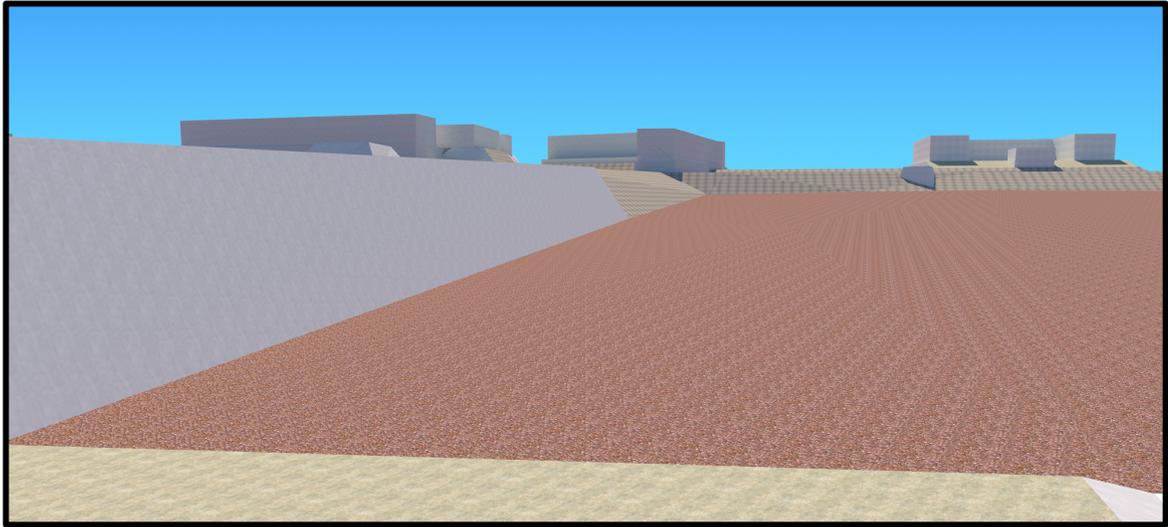


Figure 0.4. The view from the platform placed on the causeway, looking south. Render by author.

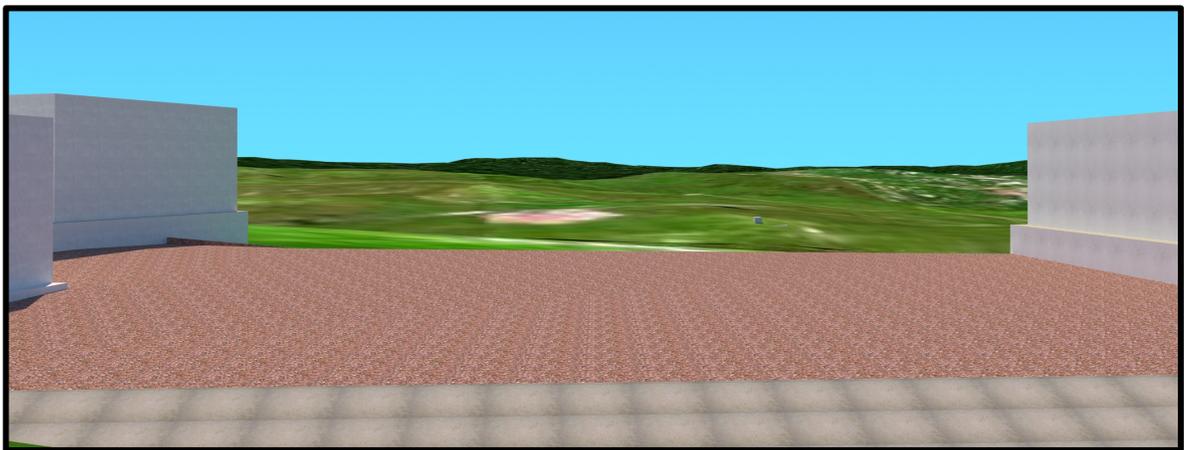


Figure 0.5. The view from the top terrace on the causeway looking south toward La Milpa (center of image). Render by author.

The artificial modification of bedrock created terraces that form three steps, wrapping around from the area south of Structures 3303 and 3304 toward the east of the site. This indicates that public access to the eastern portion of La Milpa North was likely largely directed across a broad area capable of accommodating large crowds, between La Milpa North and the Northern Platform. Along this pathway, the western courtyard of

Structure 3303 is open and visible. At the end of this route, Stela 22, a boundary marker, was placed just south of a large open space (Figure 7.2).

Having been placed along an elaborated processional route, Stela 22 is in line with current understandings of boundary marking practices for the colonial era and Classic Maya. For instance, in his discussion of Wayeb rituals documented by sixteenth-century friar Diego de Landa, Michael Coe (1965) suggests that the ritualized movement from central temple to outlying stone shrines, in a counterclockwise fashion around the township, served to define polity boundaries as the act of ritual circumambulation serves to increase cohesion and reproduce communal identities. Coe (1965) argues that this practice was of particular importance to communities with dispersed settlement patterns, as is common in the Maya region. Barbara Tedlock (1992:82) has documented similar counter-clockwise processional rituals among the K'iche where processions are made to the four corners of their domain in calendrical rituals, and to mark the boundaries of lands controlled by lineages. Ritual circumambulation replicates the act of creation described in the Popol Vuh, wherein the process by which the world comes into being is analogous to the laying out of a four-sided milpa (Ibid). Processional boundary marking practices were and are so essential to the Maya that spaces that have not been sided and cornered are considered to be disordered and dangerous, as it is the act of circumscribing and centering a place that transforms it from a wilderness into a proper arena for human action (Taube 2003).

Several scholars have found material connections to processional rituals observed in the ethnographic and ethnohistoric records in the archaeological record, projecting these practices as far back as the Late Preclassic period. Kathryn Reese-Taylor (2002) for instance, examines the sites of Cerros and Tikal alongside ethnohistoric and epigraphic texts and concludes that ancient Maya centers deliberately integrated causeways into their civic plans to provide spaces for circumambulation rituals, which in her view, were performed to reenact the activity of the cosmos, delineate community boundaries, and increase community cohesion and social solidarity.

I argue that the La Milpa Northern Causeway serves much the same function as those discussed by Reese-Taylor (2002). At La Milpa North, the built environment provides spaces not only for procession, but for performative engagement with processers in visually engaging ways. In addition, the architects deliberately control visual access to the southern horizon to create an impressive view of the La Milpa polity. These efforts create an overall experience, making full use of human motility and visual senses, that enhances the efficacy of ritual activities designed to create and reify community cohesion. The presence of Stela 22, placed on a short offshoot of this pathway, is further evidence for the integrative functions of the ritual processions that occurred here.

The proposed Northern Causeway continues on to the site of Tzak Naab, a hinterland ritual complex built upon three ascending artificial tiers supporting large unenclosed plazas located 1.5 kilometers northeast of La Milpa North. Tzak Naab was built entirely in the Terminal Classic, presumably in a single construction episode

(Kotsoglou, n.d.). The top plaza could support audiences of over 4,000 individuals while the secondary tier could have held an additional 8,000, with a somewhat conservative estimate of one square-meter per person (see Inomata 2006). The area to the south of Tiers A and B was likely the primary access point to the public gathering areas of Tzak Naab. A group of platforms frame the approach to the site and represent the terminus of the proposed causeway connecting Tzak Naab to La Milpa Center via La Milpa North.

Through movement and vision, architects of Tzak Naab integrated its built environment with the ‘unbuilt’ but cultivated spaces of the *bajo*. Approaching along the proposed causeway route, processional participants would first have encountered a series of four low-lying platforms that frame Structure A-1. This experience unfolds hundreds of meters to the south, where the lay of the land and the height of A-1’s superstructure and B-1’s platform are intervisible to the pathway along a lengthy section of the proposed processional route.

While the exact social and ritual functions of Tzak Naab is still under investigation (Kotsoglou, n.d.), preliminary evidence suggests the site is related to agricultural ritual activities oriented toward the fecundity of the Dumbbell Bajo. As a relatively late addition to the social landscape of La Milpa, Tzak Naab was constructed in a period in which the Three Rivers Region experienced a convergence stressor as demographic, ecological, and ideological crises threatened long-standing political economic relations (Chapter 1; Chapter 4). It seems likely that Tzak Naab was added to the sacred landscape of La Milpa as a means to mediate ecological forces that otherwise

might have appeared uncontrollable. In addition, this may represent an effort, on the part of ruling political and religious elites of La Milpa, to directly interact with productive spaces amidst the environmental and socio-political uncertainties of the Terminal Classic. Alongside La Milpa North, which appears to have both administrative and ritual functions, these places suggest that political power and ritual performance and practice may have been in the process of shifting from city-centers to the hinterlands as the Terminal Classic unfolded at La Milpa.

Structure 3303

When examined from an experiential perspective, I argue that the architects of Structure 3303 arranged the architecture to control the experiences of interactants. As the most likely candidate for public performance space at La Milpa North, given its large plazas and open access, the experiences created by this architectural assemblage was likely a paramount concern of its architects. Although XWAP and LMAP carried out only limited excavation within Structure 3303, several interesting aspects of the experiences it created can be discussed here, including the control of the field of vision in ways that emphasize directionality, and a platform that creates a distinctive view of features within Structure 3301.

Perhaps the most distinctive feature of Structure 3303 is its two courtyards, defined and created by architectural arrangements in an S-like pattern. Judging by the shape of the mounds of this structure and excavation data, it can be inferred that this structure enclosed three sides of each courtyard such that the eastern courtyard was open

to and accessible from the south, and the western courtyard opened to and accessed from the north, save a narrow gap between its southernmost range structure and the central arm of Structure 3303. This creates an effect wherein vision is constrained to either the south, in the case of the eastern courtyard, or north, in the case of the western courtyard, horizons. The effect is achieved by using a familiar architectural vernacular, for instance, platform risers accessed by staircases, and ranged multi-room structures, typically associated with administrative buildings. While the individual elements were essentially repetitions in form that draw upon an established architectural vernacular, quite familiar to ancient Maya senses and sensibilities, the overall shape of the entire structure is unusual, suggesting a specialized purpose.

In the eastern courtyard, the viewshed of the horizon is constrained to the south, toward the site of La Milpa, while the viewshed of the western courtyard is limited to the north. It is possible that the strong directional channeling of view of people situated in these two distinct courtyards is strategic and suggestive of directional ritual activities. Interestingly, in each courtyard, a staircase is present on the eastern side. The western courtyard staircase leads to a room (Tourtellot, personal communication 2014), while the staircase in the eastern courtyard ascends to an open platform. This conforms to widespread ceremonial architectural patterns in which temple architecture is frequently placed on the eastern side of plaza groups (Becker 2004). This attribute strongly suggests that ritual functions, in addition to other concerns, were integrated into the plan of this structure.

Visual Connections to Structure 3301

Centrally placed on the easternmost arm of Structure 3303 is a low rising platform with staircase accessible from the structure's eastern courtyard. Though not observed in the field, a visual analysis of the 3D reconstruction of La Milpa North revealed an interesting alignment visible from the top of this platform. From this vantage, one can look eastward, toward Structure 3301 and find that the false doorway, which was the original doorway to Room 1 prior to a major remodeling episode in which it was sealed (Chapter 4), is precisely framed by the Structure 1 entryway from this position (Figure 7.0.6). The functional doorways to Rooms 1 and 2 cannot be observed from this position.



Figure 7.0.6. The view while ascending the staircase of the Eastern Platform of Structure 3303. Render by author.

The precision of the visual emphasis afforded to the in-filled doorway of Structure 3301 Room 1 suggests an intentional design decision and may explain why the doorway was left elaborated even as it was in-filled in the remodel. It is possible that the original doorway was framed in this way by the view atop the eastern platform prior to the

remodel, and architects of the major remodel of Structure 3301 were unwilling to completely remove this visual element, despite major revisions made to the interior layout of the structure, including enclosing the elevated courtyard and moving the doorway itself. The importance of this doorway was also marked by a cache placed directly behind it, later retrieved prior to the abandonment of the site, a testament to social memory of the previous form, and presumably the previous occupants of Structure 3301 even after the remodeling episode.

Interestingly, a performer standing atop the Structure 3303 Eastern Platform would most likely have had the audience to their west, situated within the Eastern Courtyard of Structure 3303. The visual reference to the doorway would have only been visible to those standing atop the platform and would not be viewable by the audience. I argue that this suggests a strong connection, on the part of the performer, to Structure 3301. Perhaps Structure 3301 was the residence of the performer or a close relation to the previous occupants who made use of that doorway. It is also possible that the in-filled doorway at one time bore some manner of decoration, that is no longer preserved but would have been visible to the performer – a reminder perhaps of their own social status or connection to the occupants and history of Structure 3301.

Structure 3301

Structure 3301, the largest enclosed courtyard structure at La Milpa North likely served as the primary residence of the highest-status occupants of the site. Consisting of several rooms where production, administration, religious and ritual activities, and

domestic activities occurred (Chapter 4), this structure served multiple social roles (Figure 7.7.7). As a living space, the masonry architecture provided comfort and security against the elements. More resistant to weathering than its wattle-and-daub counterparts, La Milpa North withstood wind, rain, heat, lightning strikes, and other perils far more effectively than traditional commoner households, protecting the life and property of its residents (Kurjack 2003:281).

Principal among the strictly non-quotidian functions of Structure 3301 is the expression and consolidation of social difference and power. Households built on a monumental scale exist as an enduring expression of the ability of its builders and inhabitants to control the necessary labor, expertise, and resources to create an elaborate domicile (see Kurjack 2003:280; Trigger 1990). Palatial architecture expresses the social prestige of its builders and occupants, materially transmitting and reproducing differential social statuses in a lasting and inheritable way (see McAnany 1995).

In addition, Structure 3301 was built to structure actions, communicate information to residents and visitors, and convey an array of possible appropriate choices (see Rapoport 1982). The architectural elements also create a setting befitting the status of the principal occupants and must therefore be considered as part of a performative regime that integrates sensory perceptions of the built environment with the performative practices of those who inhabit them for the purpose of expressing power and social difference (Goffman 1959:24).

communicated information regarding exactly where a person was and in whose presence they were.

This narrative, constructed through perceptual phenomena, incorporates at Stela 22, situated just outside of the entryway to Structure 3301. Stela 22, a modest plain stela marked the formal extent of the La Milpa polity (Chapter 5; Hammond, Heller, Houk, & Tourtellot, 2014). This monument, though uncarved, may have once been wrapped in textiles or otherwise decorated (see Stuart 1996) thereby increasing its communicative capacity. This monument reminds visitors and residents of the significance of this point on the social landscape of La Milpa, effectively connecting La Milpa North's architecture and the people contained within to well-established cosmological beliefs related to both the shape of the universe and the formalized boundaries of their polity.

The exterior spaces created by Structure 3301, particularly around the entryway, likewise communicate vital information through the built environment. Principal among these is Structure 3301 Temple 1 (Figure 0.7). The architectural plan of this structure closely resembles other hinterland elite temples. For instance, in form, though not decoration, it is quite similar to Structure GZ1 at El Palmar, a temple dedicated to the principal ancestor of a lineage of *lakams*, a hereditary title that is likely best translated as standard bearer (see Tsukamoto et al. 2015). In constructing this feature, La Milpa North's elites drew upon an established and familiar regional architectural vernacular that would serve to immediately connect form with function in the minds of those who experienced it. If Structure 3301 Temple 1 functioned similarly to Structure GZ1, then it

enshrined the legacy of the household by providing a space for the semi-public veneration of important lineage members.

In addition, this Structure 3301 Temple 1 was likely used in small-scale performative events as the platform in front of the superstructure provided a space suitable for several performers and a modestly-sized audience could be situated between the temple staircase and the western arm of Structure 3301. As household temples of this kind are often burial places for venerated ancestors, ritual activities were probably intimate household affairs involving the invocation of deceased lineage members. Whether actively used in ritualized performance or sitting idly at the threshold to the Structure 3301 courtyard, its presence communicated the status of this residence while promoting narratives that naturalized and legitimized the social position of La Milpa North's elite lineage (see McAnany 1995:94).



Figure 0.7. Structure 3301 Temple 1 and Structure 3301 Entryway. Render by author.

Immediately beyond Structure 3301 Temple 1 lay a narrow gap between the architectural elements that constrain both movement and vision between the courtyard and exterior spaces. The entryway was also engineered to produce a very specific experience as it intentionally restricts the gaze and movement of the walker towards Room 2's elevated bench (Figure 0.8). From this vantage, vision is constrained only to the central portion of the Room 2 bench, and little else of the remainder of the room or courtyard may be observed. The architecture of the Structure 3301 entryway thereby effectively frames the entrance to Room 2. As previously discussed, the height of the Room 2 bench is such that a person seated upon it would be situated roughly at or above eye-level a person standing within the courtyard. This effect is a subtle way to communicate the status of the seated person relative to the standing one – the seated person is not to be looked down upon while in this room. In this way, the entirety of Structure 3301 becomes an extension of the ornamentation of the body of the seated person, framed by entryway, doorway, and throne to create a powerful and dramatic visage.



Figure 0.8. View through the Structure 3301 Entryway toward Room 2. Render by author.

In addition, it is important to consider what cannot be seen from the positions just outside of the threshold to Structure 3301. By focusing the vision of the observer to a specific point and occluding the majority of the courtyard, most of the Structure 3301 courtyard is concealed. This constriction of vision means that the activities occurring within the courtyard are private. This privacy was further enhanced by the use of cord holders and their associated curtains throughout. One such cord holder was discovered on the surface above the entrance to Room 4, pulled up from below from a fallen tree.

The concealment of spaces within Structure 3301 not only conferred a general degree of privacy but may have also instilled a sense of the unknown into visitors unfamiliar with the situation just beyond the three blind corners created by the architecture of the entryway. If one was expecting the possibility of violence, then this would have been an intimidating and uneasy experience. The constricted doorways, limestone masonry construction, and scale of the architecture created a permanent and highly defensible structure resistant to fire and frontal assault – leaving the impression of

a place designed to increase the security of its occupants at the peril of those who would seek to do violence to the residents secured inside of its walls (see Kurjack 2003:282).

Once inside the courtyard, the viewer would have the ability to see the entire layout of the architecture surrounding the courtyard. Through the entryway, only Structure 3306 and a portion of the westernmost arm of Structure 3303 would be in visible. Otherwise, the viewshed was confined to the three doorways to on the eastern arm of Structure 3301, Room 5 on the western side, and an unknown number of features on the northern and southern arms of the structure.

Though all doorways connecting the courtyard space to interior rooms would be visible from points within the courtyard, privacy was most likely maintained. As evinced by a cordholder located on the surface near the Room 4 doorway, many of these rooms likely had the option to be closed off through the use of textile curtains. Even when doorway curtains were not drawn however, many rooms appear to have privacy considerations as major components of their design. For instance, Rooms 4 and 5 both have one or more benches offset from the doorway and hidden from view. The interior plan of Room 4 goes so far as to include a non-load-bearing wall to separate and conceal its anterior bench. Room 3 is likewise completely out of view from points within the courtyard. Room 1 has a more open plan, as its bench and associated niche may be viewed from select positions within the courtyard, though its main work areas, inferred from the distribution of production-related artifacts (Chapter 6) remain well out of view.

Conclusion

A portion of the meanings encoded in this built environment may be partially accessed today through the use of both traditional phenomenological methods as well as emergent digital technologies that can aid in reconstructing sensory experiences. While the precise interpretations of experiences generated by ancient actors may be lost to time, the reconstruction of what may have been experienced enables analysts to make inroads into better understanding the communicative aspects of ancient social landscapes.

Attention to phenomenological characteristics of La Milpa North's built and natural environments demonstrates that palace architecture not only created a pleasant and passively status-enhancing place to reside, it also deliberately and strategically controlled the experiences, guiding movement and vision to communicate information to visitors. For instance, Structure 3301 manipulated space to achieve a number of outcomes including the creation of private spaces, a visual emphasis on semi-public spaces such as Structure 3301 Temple 1 and the Room 2 bench, the control of movement within and between spaces, and defensibility of the whole. Largely, these experiences appear to center on legitimizing the authority of its primary residents, both through the qualities and layout of the architecture itself, as well as by making connections. These connections include emphasizing relationships between the site and other places, such as La Milpa Center and, later in time, Tzak Naab, as well as spiritual forces and ritual activities. By demonstrating relationships to distant centers of power, deceased ancestors, and cosmological forces, La Milpa North's residents consolidated their own social position by

both expressing and naturalizing their privileged position within ancient Maya social orders.

Chapter 8: Conclusions

The House of the *Sajal*?

Ancient Maya society is often described in terms of two classes; elites who are the holders of wealth, status, and authority, and commoners who comprise the vast majority of society (Hammond 1991a). Archaeological investigation of households however, in both elite and commoner contexts, demonstrates that the Maya lived in a range of material conditions (Marcus 2004), while hieroglyphic inscriptions identify multiple ranks as well as ranks within given titled ranks, of royal and non-royal elites (Houston and Stuart 1998, 2001). The governance of a given Maya polity, itself comprised of myriad people best described as existing along continuums of material and sociopolitical statuses, was carried out through an immensely complex networks of authority, collaboration, and competition (Schortman and Ashmore 2012; Schortman, Urban, and Ausec 2001).

Ruling over large urban polities and yet, in some cases, subservient to higher regional authorities such as *kaloomtes*, *k'uhul ajaws*, or “holy lords”, derived their legitimacy from privileged ideological and cosmological positions based on dynastic inheritance. In the Late Classic, *k'uhul ajaws*, facing progressively more demanding political economic conditions, increasingly relied on networks of high-status non-royal persons who performed various civic and ritual duties, held military posts, and acted as extensions of royal authority (Golden et al. 2013).

Recent iconographic, epigraphic, and archaeological research has shed light on a particular stratum of elites, who though not of royal lineages, nevertheless held hereditary titles and worked to maintain security, order, and continuity within the polity. Titles, such as *lakam*, a military office meaning standard-bearer (Lacadena 2008; Tsukamoto et al. 2015), and *sajal*, most likely translating to “war captain” or “feared one” (Jackson 2013:12), were bestowed on members of particular non-royal lineages. Epigraphic references to these individuals demonstrate that title-holding elites, who often inherited their positions (Stuart 1989, as cited in Hammond 1991) and acceded to them through rites of enthronement (Houston and Stuart 2001:61), were important members in the political structure of a polity. While subordinate to royal authority and dependent on it for the basis of their status, non-royal elites nevertheless pursued their own agendas and claims to legitimacy (Golden 2010), and could become rivals to dynastic authority (Golden et al. 2013). *Sajals* for instance, governed secondary centers, performed public rituals, acted as agents in foreign affairs, participated in warfare, and were subject to the repercussions of political violence as both captive takers and as valuable captives (Culbert 1991; Jackson 2013:53). Likewise, *lakams* performed similar functions (Tsukamoto et al. 2015). As warriors, community leaders, and administrators of local affairs, titled elites negotiated complex fields of social relations, involving all social strata, to fulfill civic responsibilities and engage in the social and economic reproduction their households.

Archaeological evidence also demonstrates that many title-holding elites resided on the outskirts of civic centers, a sensible location given their responsibilities as governors of political subdivisions. A significant part of their responsibilities may have included enforcing and defending the borders of their polities, as is the case at La Pasadita and Tecolote on the outskirts of Piedras Negras (Golden 2010). In addition, these hinterland locations appear to often have cosmological significance, including notable examples at Copan, such as the North Group (Ashmore 1991) and Group 9N-8 (Webster 1989), a site that is part of the Copan cosmogram as proposed by Maca (2006), and the Guzman Group, a northern satellite of El Palmar (Tsukamoto et al. 2015) that shares a similar position on the social landscape and certain morphological characteristics with La Milpa North.

Hinterland elites leveraged the architecture of their hinterland domiciles to fulfill their civic and domestic responsibilities. Constructed on a monumental scale and in cosmologically significant locations, hinterland elite residences provided functional spaces for domestic, economic, and social practices while communicating and legitimizing unequal relations of power.

The majority of what is known about titled non-royal elites, and indeed ancient Maya political organizational structures and those who populated them, is derived from textual sources (Jackson 2013:7). In the Three Rivers Region however, textual information is scarce. Nevertheless, it may be possible to infer the presence of titled non-royal elites through careful attention to the spatial arrangement of architectural features

and the artifact assemblages present at a given location on the landscape. Because this class of elites built structures and deposited artifacts according to their practical needs and ideologies, domestic architecture and assemblages reflect the concerns of its commissioners and residents. Thus, the activities of an elite household, which included elites as well as their retainers, became inscribed in the landscape through architectural plans and artifacts associated with their household. It is therefore possible, that titled non-royal elites may be discernible through the archaeological record, even where textual sources are lacking or non-existent through comparative analysis of the total assemblage to sites where titled lineages are textually identified.

In short, the strategic and ideological concerns of titled non-royal elites are manifest in the architecture and artifacts they left behind. To summarize, these concerns include 1) the economic reproduction of the household; 2) their responsibilities as agents of state authority; 3) participation in military actions; and 4) the reproduction of the privileged social status of the household, including 4a) the communication and naturalization of social inequality and 4b) expressing privileged positions within ideological and cosmological belief systems. If archaeological evidence suggests that an elite residence paid deliberate attention to the aforementioned concerns, it is possible that the household contained a lineage of titled non-royal elites.

La Milpa North as the Residence of Titled Non-Royal Elites

In this chapter, I argue that La Milpa North, a palatial residence and administrative center situated on the outskirts of the major center of La Milpa, Belize,

was home to a lineage of titled non-royal elites, possibly holding the office of *lakam*, *sajal*, or their equivalent. In addition, the data regarding productive activities at La Milpa North, as detailed in chapter 6, indicate that the residents of the palace compound were responsible for their own economic reproduction, which conforms to expectations for non-royal title holding households. In the case of La Milpa North, these economic activities included the management of the labor of others as well as the production of status-enhancing goods for elite and/or ritual exchange and consumption. In addition, the architecture and site plan of La Milpa North, when examined from both experiential and practical perspectives, reveals the social, strategic, and quotidian concerns of its architects and residents. In addition, through revisiting the La Milpa Cosmogram Hypothesis, explored in depth in Chapter 5, I find that because La Milpa North functioned as a boundary marker in accordance to a cosmological design, the palace compound resided in a cosmologically significant location on their regional social landscape. In sum, I argue that the architecture and assemblage of La Milpa North conforms to the interests of a title non-royal elite household.

Economic Reproduction

Excavations within and around La Milpa North's palatial compound demonstrate that the economic reproduction of their household was among their primary concerns. At La Milpa North, elite engagement with productive activities can be divided into two types: supervision over the labor of lower-status individuals, and the direct production of sumptuary goods (Chapter 6).

As supervisors, La Milpa North's elites organized the production of stone tools in a process that involved multiple points on the landscape. Material collection and decortification occurred on the western slope of the La Milpa North hill, while final stage reduction occurred in close proximity to the palace, suggesting a division of labor and centrally controlled production process. This production process, involving multiple skilled and unskilled laborers staged across the landscape, strongly suggests that it was centrally organized. The proximity of late-stage production to the palace compound indicates involvement on the part of palace residents in this process. While the scale of this production has yet to be precisely determined, it likely exceeded the needs of palace residents themselves. This implies a network of exchange that involved, at minimum, a local distribution of finished stone tools.

The hilltop location of the La Milpa North palace also may have facilitated the supervision of labor occurring in the essential agricultural space of the Dumbbell Bajo a large and fertile territory in which the production of maize, fuel, and wild-growing organic materials was possible. As the largest bajo in Northwestern Belize, this productive space was likely essential to the political economy of the La Milpa Polity. Given the hilltop location of the La Milpa North palatial compound, which directly overlooks this bajo, the surveillance of this part of the landscape was likely among the responsibilities held by La Milpa North's elites.

As direct producers, the residents of Structure 3301 manufactured cloth, shell adornments, and possibly ceramics. Excavations within the La Milpa North palace

compound yielded an assemblage related to the production of sumptuary goods. Specular dyed cloth was manufactured at Structure 3306, while shell objects, including jewelry and adornments were produced within Structure 3301 Room 1. Ceramic production at La Milpa North can be inferred from a set of artifacts interpreted to be the toolkit of a ceramic producer oriented toward making incised vessels, found in Structure 3301 Room 5.

The distribution of finished materials from these production processes remains unknown. The unified production process however, integrating the manufacture of specular dyed cloth from Structure 3306 and the production of shell armbands and adornments in Room 1 Structure 3301 suggests that one possible final product was highly adorned cloth garb. As governors of secondary centers, agents of political authority on both local and inter-polity levels, and participants in ritual performance, titled elites required a source of ornamented garments to fulfill their basic social and political functions. Given the economic independence of such elites, the workshops of royal lineages could not be relied upon to supply these essential items, and would need to be produced locally for immediate consumption. This is certainly the case at Copán Group 9N-8, the residence and formal seat of a titled elite and the site of production for adorned regalia (Widmer 2009).

In total, La Milpa North's residents acted in ways that are to be expected from titled elites in terms of their economic activities. They oversaw the labor of others to meet both household demands as well as exchange requirements and produced status-

enhancing goods used in political and ritual performances. These activities demonstrate a measure of household economic independence. Like other titled elite households, the residents of La Milpa North acted as an independent economic unit, meeting household needs as well as social and political obligations in part through domestic production processes.

Agents of State Authority

Titled elites served as occupied essential roles within ancient Maya political hierarchies. Their responsibilities included serving as polity administrators and military leaders. The architecture of Structure 3301 contains evidence that the elite residents of La Milpa North likely fulfilled both roles (Chapter 7).

Polity Administration

Titled elites were essential to the administration of ancient Maya polities. Holding dominion over territories large, populous and complex to be managed by any single individual, ancient Maya rulers delegated certain governmental responsibilities to subordinate high-status agents. The demands placed on titled elites by these obligations are reflected in their domestic architecture, which served not only as residences, but also as places for political performance.

Structure 3301 was designed to provide formal spaces for polity governance and the reception of visitors. The single bench that spans the interior of Structure 3301 Room 2 contains offered a commanding view of the courtyard and its entryway. This bench was elevated 80 cm above the surface of the plaza, so that the seated elite would be eye-level

with a standing person. The size, shape, and position relative to the courtyard entrance suggest that this bench shares common features with others identified to be seats of non-royal authority (Bardsley 1996). In addition, its location behind the middle doorway facing an entrance draws upon an established architectural vernacular common to the Maya region for non-royal residences and spaces used for public and administrative purposes (Webster and Inomata 2004:169). Room 3, the ancillary room attached to Room 2 In addition, a small polished hematite mosaic mirror fragment was discovered in front of Room 2 and was likely once part of a large mirror. The hematite mirror fragment supplements these data by connecting Room 2 to a corpus of iconography depicting lords seated on large thrones and peering into mirrors while conducting state business (e.g. K2711, K2784, K4096). These factors create legitimacy in the minds of interactants by drawing upon an established architectural vocabularies and common practices of authority.

Militaristic Concerns

Among the principles duties of certain titled elites, such as *sajals* and *lakams*, are military functions, including the maintenance of established borders and participation in warfare events. Titled elites, as agents of the state and important members of military orders, were often perpetrators and targets of political violence. Holders of *lakam* and *sajal* titles are frequently mentioned as captives and were desirable targets for enemy forces. While evidence of warfare is limited in the Three Rivers Region, this is likely the result of the lack of written sources from this region rather than evidence of an absence of

political violence, which appears to be ubiquitous throughout the Maya region. It is therefore highly probable that defense of the household was a principle concern for a titled elite family at La Milpa as much as anywhere else.

La Milpa North Structure 3301, which during its initial known phases of occupation was an open platform containing at least four structures, was remodeled sometime near the onset of the Terminal Classic period, a time of increased political violence throughout Mesoamerica. The remodeling episode completely enclosed the courtyard by constructing a series of abutting structures encircling its perimeter. In addition, the entryway was narrowed from approximately four meters wide to only one meter in width. This reconfiguration also added two blind corners to the entryway, and placed Structure 3301 Temple 1 just outside of the entrance to the courtyard.

These renovations would have made assaulting Structure 3301 enormously difficult. The capture of an individual inside the residence would require moving past an elevated platform, then through the courtyard through a narrow entryway that could easily conceal and protect additional defenders. This architectural arrangement acted as a force multiplier. With only one entrance, assaulting the structure would require either scaling the steep limestone walls of the palace, or fighting through a highly defensible entryway. While there are several other concerns addressed by the enclosure of the Structure 3301 courtyard, such as visual privacy, or stylistic consideration, it seems likely that the personal security of the residents housed within was a factor in the remodeling of the palace. Interestingly, a stone spear point was located near the entrance to the palace.

The circumstances of its deposition are unclear, as it is unlikely to have been deposited in a warfare event given the evidence for a peaceful and orderly abandonment of the palace. Nevertheless, the weapon point seems to support inferences of a military function of La Milpa North's palatial architecture.

Reproduction of Social Status

In addition to economic, political, and military concerns, titled elites needed to reproduce their social status in the minds of common people and express their rank to other high-status members of society. Elites at La Milpa North leveraged their domicile, an agentive social force in its own right, to publicly attest to their ability to concentrate labor and consume resources.

Living amidst an expansive corbel vaulted limestone masonry palace was a stark contrast to the living conditions experienced by most other members of the community who inhabited more modest dwellings. Variance in lifestyle between the residents of La Milpa North recreated and emphasized social difference and naturalized the social inequality on which ancient Maya systems of authority relied. Not only did palace architecture demonstrate a vast differential in status, the artifact assemblages contained within also reinforced to social difference. Palace residents leveraged long distant exchange relations that to acquire obsidian from sources in Guatemala, several varieties of shell from coastal regions, and high-quality granite grinding implements from Mountain Pine Ridge in central Belize. Dyes, pigments, painted plaster, and mural fragments were also a common part of the artifact assemblage at La Millpa North, found

in Rooms 1, 2, and 3 of Structure 3301 and in work areas of Structure 3306, and from them we can infer that the palace was at one time a colorful place occupied by people who regularly wore fine dyed and ornamented cloth, likely a strong point of differentiation between palace residents and most Maya individuals. In addition, there are of course many items of value that were not found. We can only assume that other fine objects were also present within the confines of the palace, which were either perishable or removed during abandonment.

The location of La Milpa North on the landscape also contributed to social understandings of difference. The high elevation of the palace compound not only provided better living conditions in terms of climate, but also conferred a degree of privacy to the residents within, who could easily gaze into the house lots of hundreds of families. In addition, hilltop location would have served as prominent landmark on the social landscape of the region, as it was visible from virtually every direction for several kilometers, including from the higher elevation points of La Milpa Center (Hammond and Tourtellot 2003). The architectural plan of La Milpa North was an essential part of communicating status and naturalizing social difference.

In addition to establishing social difference through stark contrasts in building materials, labor investment, and scale of the household, the architecture of La Milpa North communicated specific information regarding the status of its residents. Structure 3301 Temple 1 closely resembles other hinterland elite temples, and is quite similar in form to Structure GZ1 at El Palmar (Tsukamoto et al. 2015). In constructing this feature,

La Milpa North's elites drew upon an established and familiar regional spatial vernacular. Structures of this type were most likely used in small-scale performative events as the platform in front of the superstructure provided a space suitable for several performers. If Structure 3301 Temple 1 functioned similarly to Structure GZ1 (ibid), then it enshrined the legacy of the household by providing a space for the semi-public veneration of important lineage members. The symbolic meaning of this edifice may have also been enhanced by the fact that it was built atop a previous structure, ostensibly a residential building of a high-status individual that predates the expansion of the palace in the Late to Terminal Classic. As such, its presence communicated the status of the elite family and promoted narratives that naturalized the social position of La Milpa North's elite lineage.

The primary variance between Structure 3301 Temple 1 and others of its type is the placement of the temple in relation to other palatial features. This structure abuts the Northwest wing of Structure 3301, an unusual but intentional placement given that building space was available to the north of the compound. By placing the temple tightly against Structure 3301, architects were able to place it to the south of Stela 22. As this monument marked the formal northern boundary of La Milpa, the placement of Structure 3301 Temple 1 directly south of Stela 22 reinforced the notion that the palace and its residents occupy a cosmologically significant position in the sacred geography of La Milpa and are located within the boundaries of the community.

Conclusion

La Milpa North elites employed their privileged position within local and regional political economies to ensure the successful material and social reproduction of their household. By the onset of the Terminal Classic, La Milpa North's elites were faced with a set of rapidly changing political economic circumstances, which forced them to make difficult decisions to negotiate these evolving conditions. The evidence I present here suggests that La Milpa North elites merged cosmological ideation with traditional and emergent sources of authority and economic practices to ensure the successful reproduction of their household. To accomplish this, they continued to participate in the practices that connected them to a longstanding political economic system based on tribute, the production of sumptuary goods, and elite networks of exchange, while also leveraging the labor of their community to produce goods for the local markets on which resource specialized communities relied. Ultimately, this household could not endure the Terminal Classic collapse, at least not in this place. They pierced a plaster floor to retrieve items from a cache, smashed and burned household belongings, and departed. Their legacy is enshrined by the materials and landscapes they left behind, offering a fragmentary glimpse into the strategies and practices they employed to endure changing political economic circumstances.

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