

EVIDENCE FOR RITUAL ENGINEERING IN THE LATE/TERMINAL CLASSIC SITE PLAN OF LA MILPA, BELIZE

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Proponents of site-planning studies argue that the Ancient Maya expressed both political and cosmological symbolism in architecture and site plans, while detractors fault site-planning advocates for not being scientifically rigorous in their methods. Recently, the debate between the two sides has focused on whether or not the Maya created cosmograms in the layouts of their sites. Our recent investigations at La Milpa, Belize attempt to redirect site-planning studies back to a more encompassing approach that searches for meaning at various scales. In doing so, we propose that planning and engineering be considered together and that engineering can include ritual or symbolic components. This paper focuses on two contemporaneous caches, each of which contains incised jar lids decorated with a mat design. We argue the caches are ritually engineered deposits that integrate otherwise discrete architectural components into a coherent Late/Terminal Classic royal precinct plan. Furthermore, the mat design on the jar lids suggests royal sponsorship of the engineering and construction of the plaza. While much of the symbolism in the caches is unclear, we are able to recognize that political and/or cosmological symbolic communication has occurred as part of a ritually engineered component of Plaza B at La Milpa.

Los proponentes de estudios de planificación de sitios sugieren que los mayas antiguos expresaron simbolismo político y cosmológico tanto en la arquitectura como en los diseños de los sitios, mientras que los antagonistas sugieren que muchos de dichos tipos de investigación carecen de rigor científico en su metodología. Nuestras excavaciones recientes en el sitio de La Milpa, Belice, demuestran el potencial de identificar elementos rituales asociados con la planificación de sitios que se depositaron dentro del paisaje cultural para hacer, en algún sentido, declaraciones políticas. Nuestro argumento se enfoca sobre dos depósitos de la época Clásica Tardía/Terminal que reflejan un plan coherente de componentes rituales dentro de la construcción de Plaza B de La Milpa. Ambos depósitos incluyen tapas de jarras decoradas con diseños tejidos. Sugerimos que estos depósitos sirvieron para integrar ritualmente los distintos componentes arquitectónicos alrededor de la Plaza B durante el Clásico Tardío/Terminal. Además, el diseño tejido en las tapas indica que la construcción y disposición de la plaza se llevó a cabo bajo el patrocinio de la familia real. Mientras que la mayoría del simbolismo de los depósitos permanece desconocido, por lo menos podemos reconocer que alguna forma de comunicación política y/o cosmológica ocurrió como parte de un componente ritualmente integrado en la planificación de Plaza B en La Milpa.

Ashmore and Sabloff (2002:201) recently observed “it is increasingly clear that maps of [Maya] civic centers evince considerable planning and meaningful arrangement in the placement of buildings, monuments, and open spaces.” While many factors influenced the final plan of a Mesoamerican settlement, particularly those of ceremonial centers, it is apparent in many cases that symbolic meaning was built into the cultural landscape (e.g., Ashmore 1991; Ashmore and Sabloff 2002; Carrasco 1999; Low 1995, 2000; Sugiyama 1993). Many site-planning

studies in Maya archaeology have been justifiably criticized for being subjective, impressionistic, and based on untested assumptions (Smith 2003, 2005). The challenge for archaeologists is to develop research designs that explicitly search for evidence of urban planning in ways that are both rigorous and specific, yet can offer meaningful insight into the manners in which ritual, political, and even cosmological statements were embedded within ancient Maya built environments. Much criticism has been directed toward the uncritical application of a cosmogram concept

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in Maya studies to explain the layout of everything from individual structures to entire settlement layouts (Smith 2005). The cosmogram concept is but one aspect of site-planning studies, and we feel its rather widespread use and the subsequent debate have led site-planning studies down a narrow and unproductive theoretical trajectory.

While we recognize the validity of many criticisms (e.g., Smith 2003, 2005) of how Maya archaeologists have searched for meaning in architectural layouts, we agree with Ashmore and Sabloff (2003:229) that these ideas remain a valuable intellectual pursuit. The search for meaning in architecture and space and evidence of symbolic communication requires pattern recognition in the built environment to potentially link architecture, space, ritual, symbolism, meaning, and function. It is also important methodologically to differentiate between the recognition that some form of symbolic communication has occurred and the intended meaning of that communication.

Our work around Plaza B at La Milpa, Belize is partially a response to the debate regarding site-planning studies that has taken place recently in *Latin American Antiquity* and elsewhere (e.g., Ashmore and Sabloff 2002, 2003; Smith 2003, 2005, 2007; Smith and Schreiber 2006; Šprajc 2005). On a more particular level, our work is also an attempt to redirect the discussion about site planning away from strictly cosmograms and back to a more comprehensive approach concerned with how ancient cultures embedded meaning into the built environment. Our recent findings demonstrate the potential to identify ritual and/or symbolic site-planning elements that were explicitly engineered into the built environment and intended to make, on some level, ritual and political statements.

In this paper, we review the recent debate over site-planning studies to contextualize our research. We propose that planning and engineering are part of a two-step process, and we introduce the concept of ritual engineering. While this terminology may be new, we offer examples of previous research that have identified what we consider to be examples of ritual engineering in Mesoamerica. We then discuss our new data from the archaeological site of La Milpa, Belize. Specifically, our study focuses on two caches that reflect a coherent plan of ritual components embedded within the

overall construction of Plaza B at the site. In this example, the stylistic consistency of ceramic vessels included in the caches not only links them to each other, but their placement within plaza construction ritually integrates seemingly discrete architectural components into an intentionally engineered Late/Terminal Classic royal precinct plan of Plaza B.

Recent Debates over Ancient Maya Site-planning Studies

Attempts to decipher meaning in Maya sites, features, and structures have been common during the past two decades (e.g., Ashmore 1986, 1989, 1991, 1992; Ashmore and Sabloff 2002, 2003; Brady 1997; Brady and Ashmore 1999; Chase and Chase 1998; Cheetham 2004; de Montmollin 1989; Dunning et al. 1999; Fash 1998; Houk 1996, 2000, 2003; Houston 1998; Johnston and Gonlin 1998; Mathews and Garber 2004; Miller 1998; Scarborough 1998; Tourtellot et al. 2002; Tourtellot et al. 2003; Zaro and Lohse 2005). Many of these investigations are site-planning studies, which examine the deliberate aspects of the arrangement of caches, structures, sites, and landscapes, often with the intent of unraveling their meaning and significance in the context of a broader Maya cosmology. We review the debate here in order to contextualize our research and redirect the discourse along more specific lines—that site planning occurs at a variety of scales (not just at the level of the city or town) and was used for multiple purposes (not just to create cosmograms).

Wendy Ashmore (1989, 1991, 1992) was an early and prominent proponent of Maya site-planning studies, having suggested a common Maya site-planning template based on cardinal directions and Mesoamerican cosmology. Ashmore (1991) proposed that the layout of many Maya sites followed a set of site-planning principles that were explicitly linked to a series of ancient cosmological concepts. However, in that same article, she noted that this cosmological model was one of multiple spatial templates recognized at Maya sites (Ashmore 1991:200).

Recently, Ashmore and Sabloff (2002:202) revisited the model and expanded their explanations of why the Maya employed site-planning templates by noting “the spatial expressions of Maya

cosmology and of Maya politics constituted the most prominent ideational foundations for planning.” Furthermore, they observed that the longer and more complicated the political and architectural history of a site, the more difficult it is to discern individual planning agendas. Using four site plans as examples, Ashmore and Sabloff (2002:211) concluded that the individual site layouts were the product of multiple influences, but that cosmological directionality and political emulation were two prominent factors.

Smith (2003) subsequently critiqued their ideas—or more specifically, their application of the cosmological model (i.e., Ashmore’s [1989, 1991] site-planning template)—for lacking “specificity and rigor” (Smith 2003:225). Smith (2003:221) characterized their arguments as unconvincing, noting the “influence of cosmology, symbolism, and metaphor on ancient urban plans is an especially difficult topic for archaeologists.” Smith (2003) observed that an objective methodology for identifying a north-south alignment in Maya site plans, a key component of the cosmological model, and an empirical basis for determining similarities between site plans were both lacking in Ashmore’s and Sabloff’s (2002) research.

In a later article, Smith (2005:220) is particularly critical of researchers who, following Ashmore’s work, simply assert that the Maya had architectural cosmograms without providing testable hypotheses, or more directly, a manner in which archaeologists may differentiate between several competing explanatory models for architectural design and urban planning. While many of Smith’s (2003, 2005) critiques are well-founded, we feel the debate about cosmograms has generally led Maya site-planning studies down an unnecessarily narrow theoretical trajectory. After all, Ashmore (1991:200) did not claim that the template on which she based her cosmological model was the only one represented at Maya sites. Also lost in the argument over north-south alignments and cosmology are notions of examining “political affiliation through emulation of civic architecture” (Ashmore and Sabloff 2002:202), and considerations for the conscious and deliberate decisions made during the planning, engineering, and construction phases of building Maya sites (e.g., Houk 1996:75–77).

On another level entirely, Smith (2007:42) also

questions Ashmore’s (1989) use of the term *site planning* because “it could be argued that her phrase confuses the archaeological remains surviving today and studied by archaeologists (i.e., archaeological sites) with the dynamic ancient urban settlements whose characteristics archaeologists try to reconstruct from archaeological sites (i.e., cities and towns).” Smith (2007:42), however, indicates that “Ashmore uses the phrase ‘site planning’ as a synonym for city planning,” which, from our perspective, is not an entirely accurate characterization because Ashmore applies site planning to many scales of archaeological features. It is true that Ashmore and others may have used the phrase most commonly to refer to cities or ceremonial centers, but, as originally defined by Ashmore (1989:272), site planning is more encompassing and refers to all levels of settlement patterning, down to the level of individual deposits such as caches and burials.

Scale, therefore, is the final element of site-planning studies that has been lost in the recent debate. For example, at the large Maya site of Caracol, Chase and Chase (1998:314) describe caches that “have contents that are layered and/or ordered in such a way as to suggest an intentional plan or design reflecting both directional order and placement.” They consider these to be “cosmological map” caches (Chase and Chase 1998:324), and they appear to reflect site planning (following Ashmore’s definition) on a cache-level scale.

Ritual Engineering as a Component of Site Planning

The conceptual approach we take at La Milpa’s Plaza B is a response to this debate. We begin with the premise that Maya sites evince careful planning, even in the context of dynamic evolution, and that attempting to understand the meaning behind the arrangement of structures and spaces is a worthwhile research agenda. We also recognize that Maya archaeologists have been too quick to impose cosmograms on buildings and sites using less than rigorous methods, and they have often failed to recognize competing alternative explanations for architectural designs and urban plans in ancient Maya settlement. In this sense our general research orientation is a response to Ashmore’s and Sabloff’s (2002:211) call for archaeologists to

examine the linkages between the political history of a site, its construction sequence, and the evolution of ritual, and to look for evidence of urban planning in their research.

However, at the heart of our theoretical approach is the *intent*, if not the language, behind Ashmore's (1989:272) more encompassing and general definition of site planning: "the deliberate, self-conscious aspect of settlement patterning, at scales from individual structures through regional landscapes." Smith (2007:6) is justifiably critical of this definition of site planning for its vagueness because "all urban construction—whether slum housing, latrines, or imperial palaces—is deliberate and self-conscious in nature." However, in a sense the two sides of the debate are speaking past each other because they are both interested in deciphering meaning that was deliberately encoded into the built environment.

"Planning" constitutes the first step in a two-step process of constructing a landscape: the conceptual (planning) and the applied (engineering). Engineering is most commonly associated with the application of science to address practical problems. For ancient Mesoamerican cultures, civil engineering concerns included water management; building causeways, bridges, and dams; spanning interior spaces with corbelled arches; building drained fields and chinampas; erecting large pyramid platforms on swampy terrain; creating aqueducts; leveling undulating uplands to create level platforms, etc. (e.g., Coe 1964; Pendergast 1990; Scarborough 2006). How cultures engineered the built environment tells archaeologists much about the nature of their science, mathematics, and technology.

Engineering, we propose, was also applied to symbolic or ritual elements of the built environment (Houk and Zaro 2010; Houk et al. 2009). Thus, ritual engineering refers to the application of a conceptual plan or design to convey symbolic meaning. We argue that specialized deposits, such as caches and monuments, were in some cases part of a larger-scale plan that was engineered into sites or components of sites to convey meaning at a level beyond that of the individual deposit. In other words, by "ritually engineering" sacred or symbolic features, the commissioners of a construction project were able to integrate otherwise discrete architectural features to communicate a larger political or ideological message.

The engineered solution to a problem—the canting of a plaza to facilitate drainage or the orientation of a building to provide a desired site line, for example—is encountered archaeologically; once the *solution* has been recognized, the *problem* becomes more accessible. For example, the discovery of a drain at the base of a building may reveal previously unrecognized aspects of water management at a portion of a site. In the case of ritual engineering, the "problem" may not be entirely clear because it is likely symbolic or ideological, but knowing that one exists is in itself important.

Our terminology may be new, but the approach is not. Other researchers have described what we consider to be ritually engineered features at various scales without labeling them as such. For example, Chase and Chase (1998:326) examine the distribution and content of caches in the North Acropolis of the large Maya site of Tikal and note that the "the caches placed about the northernmost plaza of Tikal's North Acropolis indicate a desire to symbolically 'center' this space relative to the rest of the city." Caches from the three excavated sides of the summit plaza (southern, western, and northern) contained articulated crocodile skeletons, and Chase and Chase (1998:326) note that "the centrality of this space is further emphasized" by Burial 10, which included a crocodile, and Burial 195, which included numerous turtles, in the southwestern and southeastern corners, respectively, of the same space. They conclude that "although Tikal's North Acropolis architecturally forms the center of the site, the associated deposits and their placement confirm the importance of this public architecture in terms of a broader cosmological plan." The inclusion of symbolically related items in otherwise discrete ritual deposits reflects a coherent, ritually engineered space.

At a much larger scale, Sugiyama (1993:122) has argued that the large central Mexican city of Teotihuacan has specific symbolic/ideological information related to Mesoamerican creation mythology and a calendar system encoded into burials, structures, and city layout. Sugiyama (1993:108) makes a compelling argument that the designers of the city plan at Teotihuacan employed a standardized unit of measurement, which he calls the Teotihuacan Measurement Unit (TMU), equivalent to 83 cm, to create the rigid grid and monumental architecture

that exemplify the city. When constructing the Feathered Serpent Pyramid, one of the three largest pyramids at the site, the Teotihuacanos included numerous individual and multiple burials of sacrificial victims; “the numbers and the distribution of individuals interred in a burial pit, as well as numbers and the distribution of offerings of certain kinds, suggest that the burial complex was . . . related to the calendar” (Sugiyama 1993:117). Furthermore, Sugiyama (1993:110–114) identifies calendar-related measurements in monumental architecture and the city layout. For example, the square base of the Sun Pyramid measures 260 TMU on each side; the pan-Mesoamerican sacred cycle or calendar was 260 days long (Sugiyama 1993:112). Other calendar-related measurements abound in the city, including the length of a diverted segment of the Río San Juan (819 TMU, equivalent to a lesser-known Maya calendrical cycle based on the motions of Jupiter and Saturn [Milbrath 1999:240]), which “suggests the association of public-water management works with concerns of the time-reckoning system” (Sugiyama 1993:111). In this light, Teotihuacan provides examples of what we term “ritually engineered” features conveying calendar-related symbolic communication at a variety of scales.

La Milpa, Belize

La Milpa is a large Maya site in northwestern Belize and is located within a forested conservation tract. The monumental architecture at the site is oriented north-south and roughly divided into northern and southern areas (Figure 1). The Great Plaza and associated structures form the northern area, while Plazas B and C, several courtyards, and the Southern Acropolis make up the southern area of La Milpa. The two areas are connected by a rough and possibly unfinished sacbe (Hammond and Tourtellot 2004:292).

The Great Plaza houses the four largest pyramids at the site, two ball courts, and 17 of the 20 stelae found in the monumental core. In addition to the stelae, the Great Plaza contains all but two of the altars known from the site. Plaza B, the focus of our investigations, is the second-largest plaza at La Milpa, measuring approximately 100 m east-west by 76 m north-south, but is less than half the size of the Great Plaza (Tourtellot 1993:18). Range structures bound all but the eastern side of the plaza,

and a cluster of small courtyards links Plaza B to Plaza C (Figure 2). The 18-m high Structure 21—the fifth-largest and only unlooted pyramid at La Milpa—dominates the eastern margins of Plaza B. The plaza contains two uncarved stone monuments, Altar B-1 and Stela 21.

Our limited excavations of the range structures surrounding Plaza B have documented architectural variability, which may reflect functional differences. Structures 23 and 24 are tandem range buildings with two rows of rooms separated by a spinewall. Both buildings were apparently vaulted. Structure 23 has very narrow rooms (ca. 1 m wide) with no internal features, but Structure 24 has 1.4-m wide rooms with a bench in the rear center room. Structure 22 is a range building with only one row of rooms and was also vaulted prior to collapse. Like Structure 24, it has a bench in the central room. Structure 21 is more enigmatic architecturally; the final phase appears to have been abandoned in progress, but portions of a buried, earlier phase of the building, including part of the central stairway and foundation walls of a summit structure, were exposed in 2009 (Houk and Zaro 2010).

Previous Research at La Milpa

Discovered by Sir J. Eric Thompson in 1938, the site was not intensively studied until the 1990s (Hammond and Tourtellot 2004). The Río Bravo Archaeological Project spent two seasons exploring and mapping the ruins with additional investigation centered on looters’ trenches (Guderjan 1991). Subsequently, the La Milpa Archaeological Project (LaMAP) investigated the site between 1992 and 2002 (Grube 1994; Hammond 2001; Hammond and Bobo 1994; Hammond and Tourtellot 2004; Hammond et al. 1996, 1998; Hammond et al. 2000; Kosakowsky and Sagebiel 1999; Sagebiel 2005; Tourtellot et al. 1993; Tourtellot et al. 1994; 2000; Tourtellot et al. 2003). Most recently, a number of researchers pursuing various lines of inquiry began investigating the site in 2007 under the auspices of the Programme for Belize Archaeological Project (Houk and Valdez 2009). The La Milpa Core Project (LMCP), tasked with investigating the southern plazas, is one component of the Programme for Belize Archaeological Project. Prior to the LMCP’s first season in 2007, the work in the Plaza B area had been limited to mapping, examining looters’ trenches, minor test pitting, and

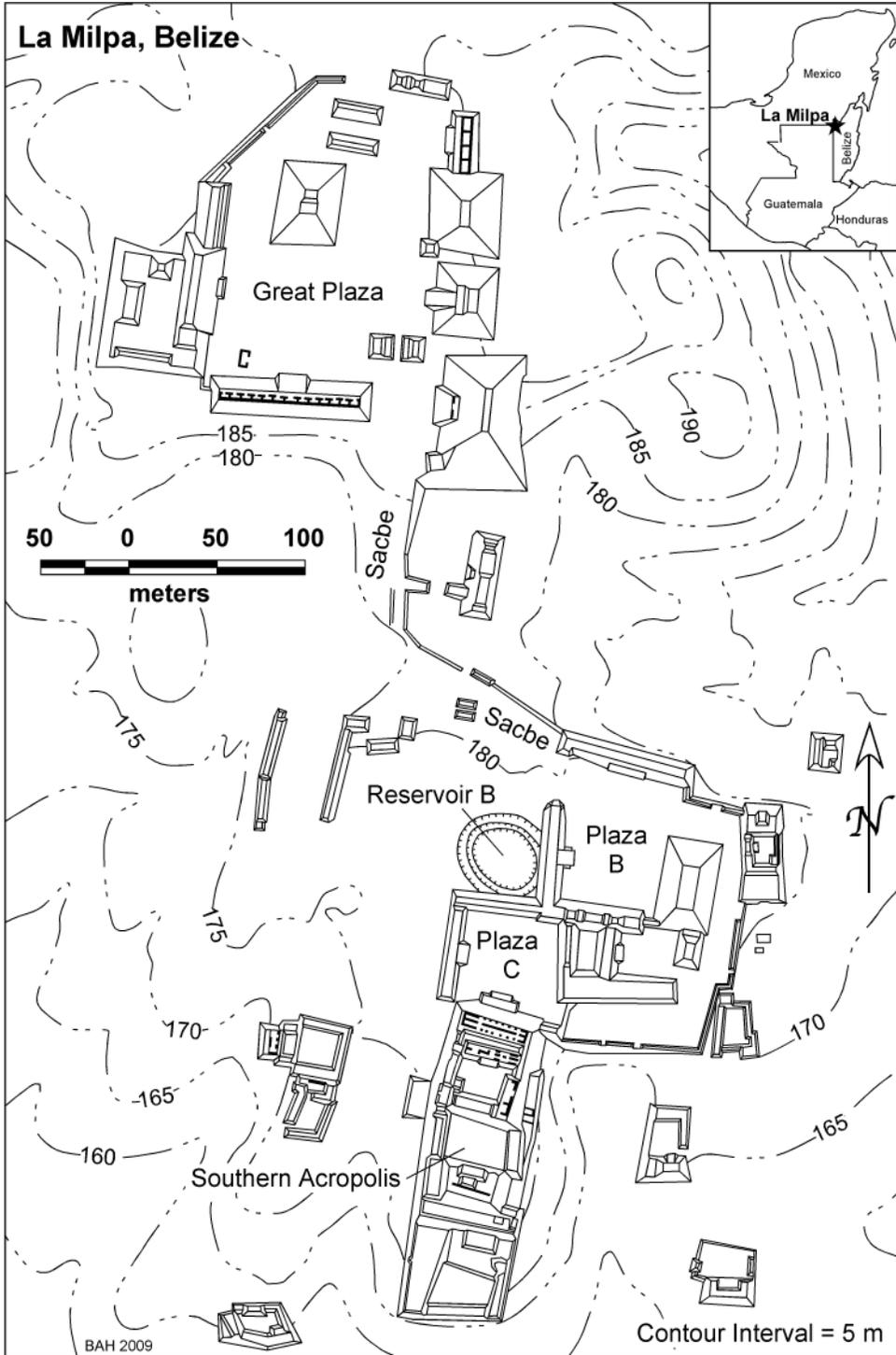


Figure 1. Simplified map of La Milpa showing major architecture and contours, redrawn from Hammond and Tourtellot (2004:Figure 13.1) and Tourtellot (2003:Figure 1). Plaza B and the surrounding area were remapped by LMCP in 2008 and 2009.

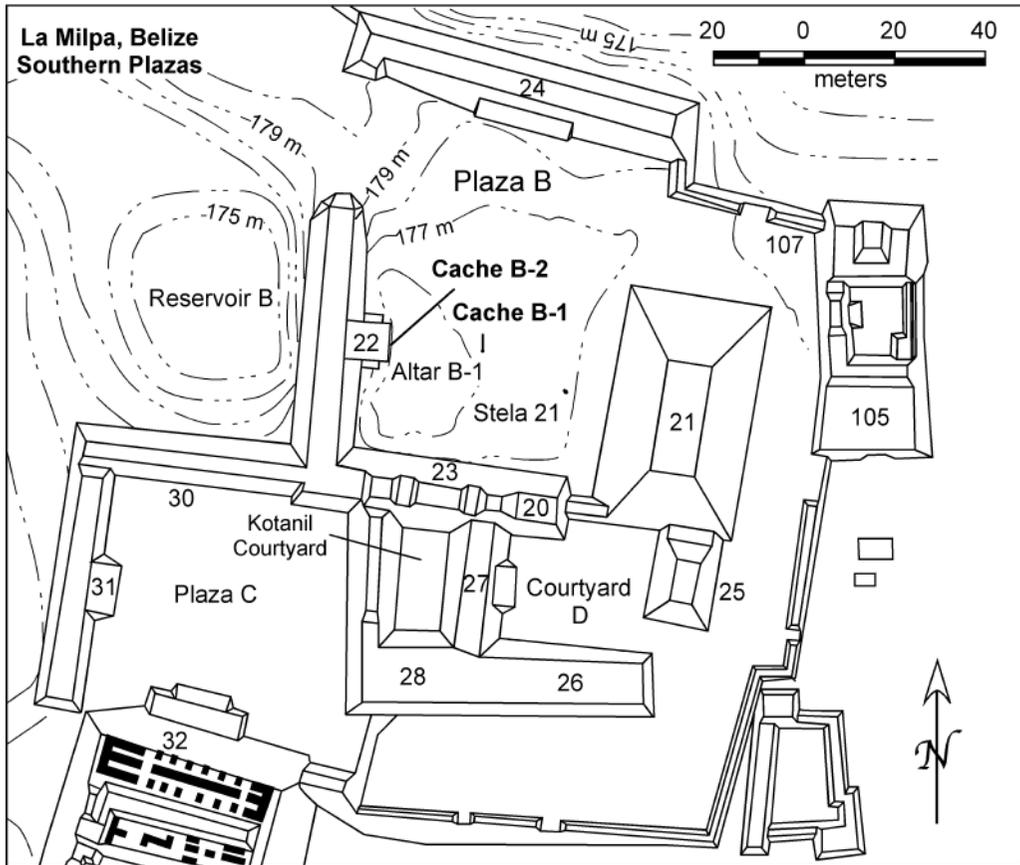


Figure 2. Map of Plaza B, showing locations of stone monuments and caches. Based on Hammond and Tourtellot (2004:Figure 13.1) with new mapping data by LMCP in 2008 and 2009.

water management studies (see Guderjan 1991:17; Hammond et al. 2000:42; Hammond and Tourtellot 2004; Sagebiel 2005; Scarborough 1999; Scarborough et al. 1995; Tourtellot 1993).

Construction History of La Milpa

Hammond and Tourtellot (2004) concluded that La Milpa rose to its greatest height shortly before being abandoned ca. A.D. 830; however, our own research suggests that portions of the site were occupied as much as a century later. The visible surface architecture in the Great Plaza at La Milpa dates to the eighth to early ninth centuries A.D. (Late/Terminal Classic period), although looters' trenches reveal a complex, but modest, construction sequence in the larger buildings beginning in the third century A.D. (Early Classic period, A.D. 250–600) (Hammond and Tourtellot 2004:292). Older floors and deposits in plaza test pits were also

encountered, indicating a Late Preclassic (400 B.C.–A.D. 250) initial settlement of the site (Hammond and Tourtellot 2004:292). The only stela with a legible long count date at the site, Stela 7, was erected in A.D. 780 during the reign of Ukay, who was apparently responsible for a significant expansion of La Milpa's royal precinct and much of the eighth century A.D. construction in the Great Plaza (Hammond and Tourtellot 2004:293).

Based on limited work in Plaza B and more extensive excavations in the Southern Acropolis, Hammond and Tourtellot (2004:293) concluded that the Late Preclassic/Early Classic settlement under the Great Plaza did not extend to the southern portion of the site core, which they believed to have been constructed quickly and late (ca. A.D. 750–800). However, Sagebiel (2005:602, 716) reports Late Preclassic ceramics from a variety of non-architectural contexts in and around Plaza B,

which she believes to be associated with occupation around Reservoir B. Combined with her data, our recent advances in 2008 and 2009 suggest a much more intensive Late Preclassic occupation at La Milpa than previously concluded. Although the nature and extent of the earlier occupation around Plaza B is not yet known, excavations at Courtyard D immediately south of Plaza B documented a Late Preclassic platform buried within Structure 27. While this early building has not been entirely excavated, our work has partially exposed a tiered platform that was truncated by later constructions. The surviving portion of the structure is over 2 m tall, and we estimate the horizontal plan of the building to cover approximately 8 x 8 m.

Although we now know that there is at least one earlier building that is coeval with the original village in the northern part of the site, we do not know the nature or extent of the Late Preclassic settlement around Plaza B. In fact, our test pit excavations consistently show one construction event in Plaza B, and it appears that the Late Preclassic material reported by Sagebiel (2005:601, 618) is from fill contexts. Four separate LMCP excavations and two excavations by Scarborough (1999) documented the following sequence (from bottom to top) in Plaza B: bedrock, in some places covered by a clayey soil,¹ a zone of boulder and large cobble fill, a zone of small cobble fill, eroded plaster floor or compact earthen surface, and finally, an organic humus layer. In Courtyard D, an LMCP test pit encountered two floors, but the two were separated by a 10-cm thick fill layer, suggesting the upper floor is little more than a resurfacing event. Therefore, all excavation data available to us suggest Plaza B was constructed in a single event. Two radiocarbon dates (discussed below) and ceramics recovered from the construction fill date this construction to ca. A.D. 690–1000 (Houk and Zaro 2010).

A newly discovered altar and stela (discussed below) also suggest that Plaza B was a functioning architectural space at La Milpa, contrary to previous interpretations regarding the incomplete construction progress at Plaza B (e.g., Hammond and Tourtellot 2004:292). Excavation data also provide evidence that Structures 21–23 underwent some degree of remodeling or architectural expansion, suggesting they had been in use for some time prior to abandonment (Houk and Zaro 2010).

Finally, the Southern Acropolis at the far southern end of the site was built rapidly in three major phases of construction during the Late/Terminal Classic period (Hammond et al. 1996, 1998; Hammond and Tourtellot 2004).

Civil Engineering at Plaza B

Constructing La Milpa's large plazas required a significant investment of labor to level artificially the irregular surface of the limestone ridge upon which the site is situated. In addition to their role as open spaces for presumably community activities, the plazas at La Milpa served as large rain catchment surfaces, which necessitated proper slope to direct runoff into a series of reservoirs and drainages (e.g., Scarborough et al. 1995). In the case of Plaza B, the Maya made some interesting choices in designing and engineering the plaza surface (Figure 3). The present-day surface of Plaza B slopes noticeably from north to south, which is one reason Hammond and Tourtellot (2004:292) concluded it was natural and never plastered. LMCP excavations, however, determined that the plaza was artificially raised (Figure 4), indicating that the slope is at least partially intentional. By completely enclosing the southern side and southwestern corner of the plaza with range buildings, the architects created an internal drainage feature in Plaza B with the lowest point in the plaza located southeast of the stairway to Structure 22 (see Figure 2). Given this morphology, it seems logical that a drain would be located at the base of Structure 22 (see also Scarborough 1999), which would have permitted runoff to pass from the plaza into Reservoir B, a tank with an estimated volume of 5,975 m³ (Scarborough et al. 1995:111). While we have not yet tested this hypothesis through systematic excavation, Hammond et al. (2000) documented a drain in the Southern Acropolis at La Milpa, so the technology was clearly in use at the site.

Also engineered into Plaza B is the terminus of a sacbe, which connects the Great Plaza to the southern plazas. According to Sagebiel (2005:631, 738), the northern end of the sacbe was constructed ca. A.D. 600–700. The sacbe itself was not completely mapped by LaMAP, but enters Plaza B in the northwestern corner between Structures 22 and 24 and terminates within a few meters (see Figure 3). Today, the southeastern end of the sacbe is vis-

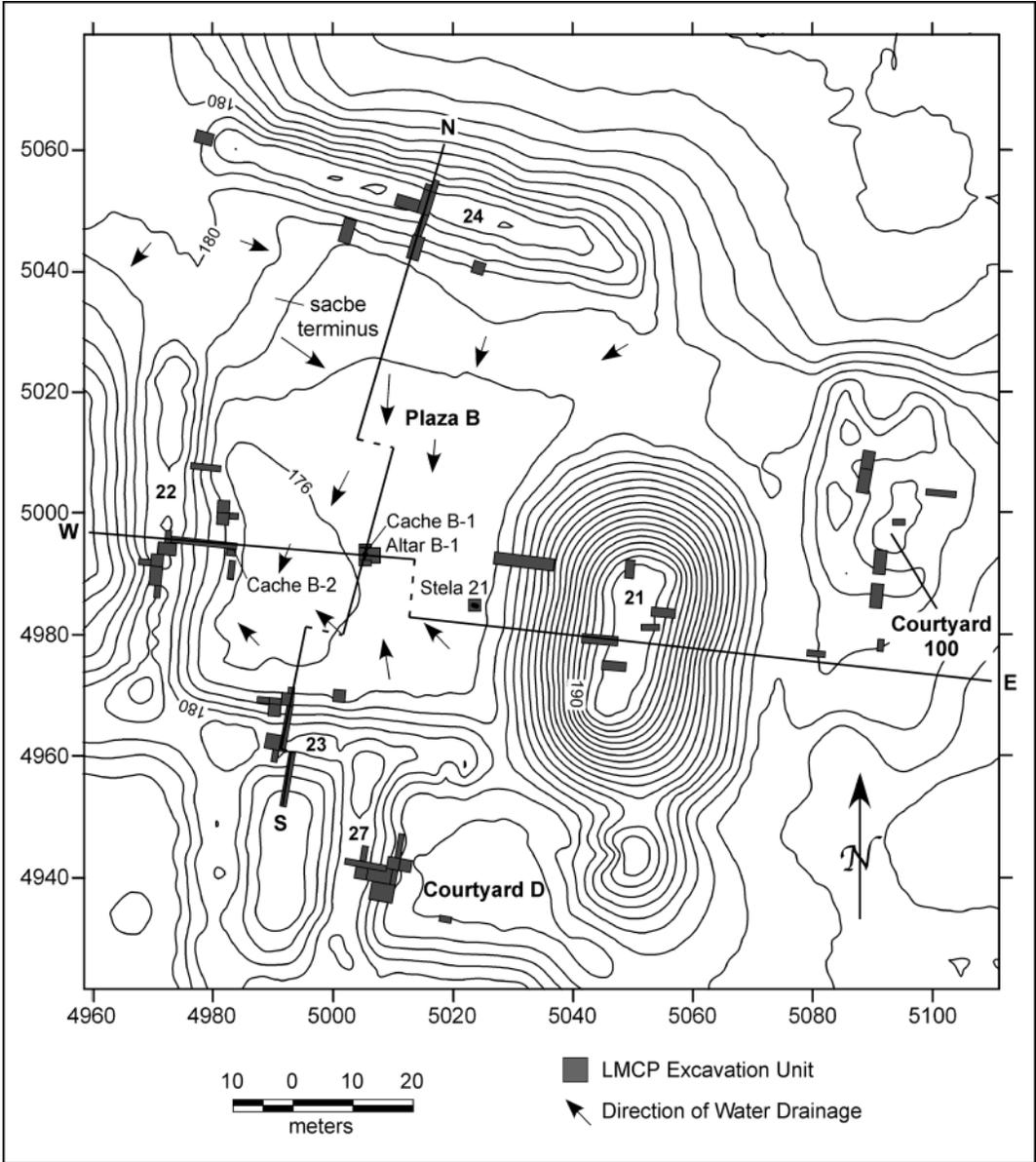


Figure 3. Contour map of Plaza B showing, LMCP excavations, drainage patterns, and sacbe terminus. The locations of discontinuous north-south (N-S) and east-west (E-W) cross sections in Figure 4 are indicated.

ible as an irregular line of rubble spanning the distance between the two buildings.

In general, it appears that engineering Plaza B involved the construction and artificial leveling of its surface and its adjacent courtyards in the eighth century A.D. To date, our data suggest that no large, formal plaza had been constructed in the area prior to the Late Classic, although there is clear evidence of earlier structures and deposits,

as discussed above. Therefore, it seems that this architectural endeavor was one large-scale plaza construction event, not a series of vertical and/or horizontal expansions. Presumably, the construction of the southern end of the sacbe connecting the Great Plaza took place at or near the same time. It is tempting to suggest that the Plaza B construction was part of the significant expansion of the Great Plaza initiated by Ukay ca. A.D. 780

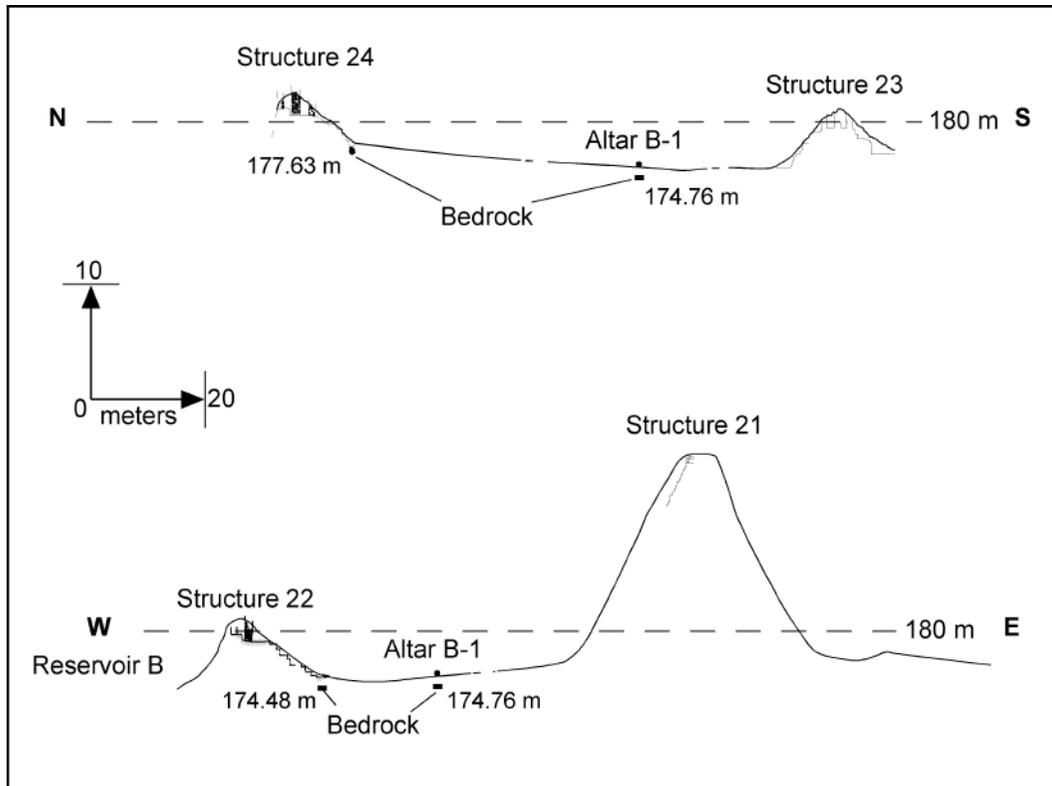


Figure 4. Discontinuous cross-sections of Plaza B showing known elevations of bedrock based on excavation data. Refer to Figure 3 for locations of cross-sections. Note that bedrock is covered by 15–30 cm of sterile clay in all excavation units.

(Hammond and Tourtellot 2004:293), though this remains speculative.

Ritual Engineering at Plaza B

It is our contention that, in addition to the civil engineering of Plaza B, La Milpa architects were also concerned with engineering ritual or sacred features into the landscape as instruments for conveying symbolic communication. We use the term “ritual engineering” to refer to the calculated manipulation and integration of ritual features across the built environment, which we believe was an essential element of royal precinct planning.² Undoubtedly, a great deal of symbolic meaning was encoded in the architecture of Plaza B, but much has been lost or is buried beneath collapse debris. Nevertheless, we believe intentionally cached deposits also represent an important element of the ritually engineered landscape.

The only visible reminders of the symbolic

imagery that once adorned Plaza B when it was in use are two newly discovered monuments: a small altar (Altar B-1) in the approximate center of the plaza and Stela 21, near the base of Structure 21. Neither monument is carved, and both are small enough that they were overlooked by previous research projects, but we suggest that Altar B-1, at least, constitutes an element of ritual engineering at Plaza B (the stela has not been investigated intensively because its original placement is unknown).

In the remainder of this paper, we describe the contextual relationships between two caches, Altar B-1, and surrounding architectural elements at La Milpa’s Plaza B. The caches link otherwise discrete architectural features and provide evidence for a coherent royal precinct plan.

While ritual engineering, like site planning in general, could have been instituted and interpreted by various levels of the social order, our example is part of royal precinct planning at La Milpa that

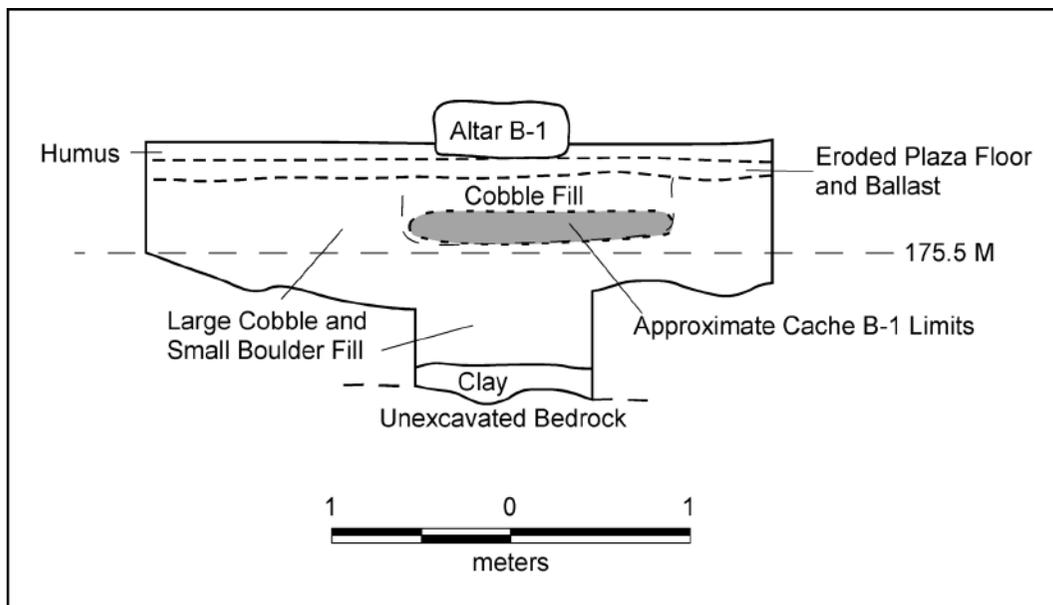


Figure 5. Simplified cross-section of Cache B-1.

was clearly initiated by elite members of society. We do not offer a comprehensive analysis of the meaning of all elements of the symbolic communication, but rather a demonstration of how such communication may be detected archaeologically.

Introduction to Caches B-1 and B-2

The two caches discussed here were discovered in 2007 during our initial excavations at Plaza B (see Figures 2 and 3). Cache B-1 was found beneath Altar B-1 in the center of the plaza, while Cache B-2 was found at the base of Structure 22 along the stair's centerline. In both cases, the caches were found in subfloor construction fill. Although not formally enclosed, the matrix surrounding the caches was distinctively different from the surrounding fill: the space above and within the caches was composed of small cobble fill while that around and below the caches was composed of small boulders and large cobbles. This suggests the caches were discrete depositional events within the surrounding matrix.

Cache B-1. An excavation unit centered on Altar B-1 determined the monument was sitting on an eroded plaster floor. Where the altar did not protect it, the floor across most of the excavations was marked only by a lens of marl and limestone pebbles overlying subfloor fill. Initial excavations

of a 1-x-1-m test pit beneath Altar B-1 encountered a dense concentration of nearly 5,000 pieces of chert debitage approximately 25 cm below the altar in the plaza construction fill (Figures 5 and 6). Ultimately, the flakes were determined to be part of Cache B-1, an extensive and complicated deposit that required expanded excavations to document. The lots relating to Cache B-1 were situated directly beneath and east of the altar and within a small to medium cobble construction fill (5–20-cm diameter cobbles). A layer of large cobble construction fill (over 20-cm diameter cobbles and boulders) defined the horizontal and vertical limits of the cache.

The cache was composed of five primary artifact clusters, which lay within the subfloor fill at an average depth of approximately 28 cm below the altar. The ceramic vessels associated with the cache had been crushed by the surrounding construction fill. The total artifact assemblage included the broken vessels, the debitage cluster, and a range of other materials (Table 1). Most notable among the ceramics was a jar-and-lid pair with a mat design incised on the lid (discussed below).

Cache B-2. Excavations at the base of Structure 22 in 2007 partially recovered Cache B-2, located approximately 40 cm beneath the plaza surface, within the construction fill (Figure 7). In 2008, a

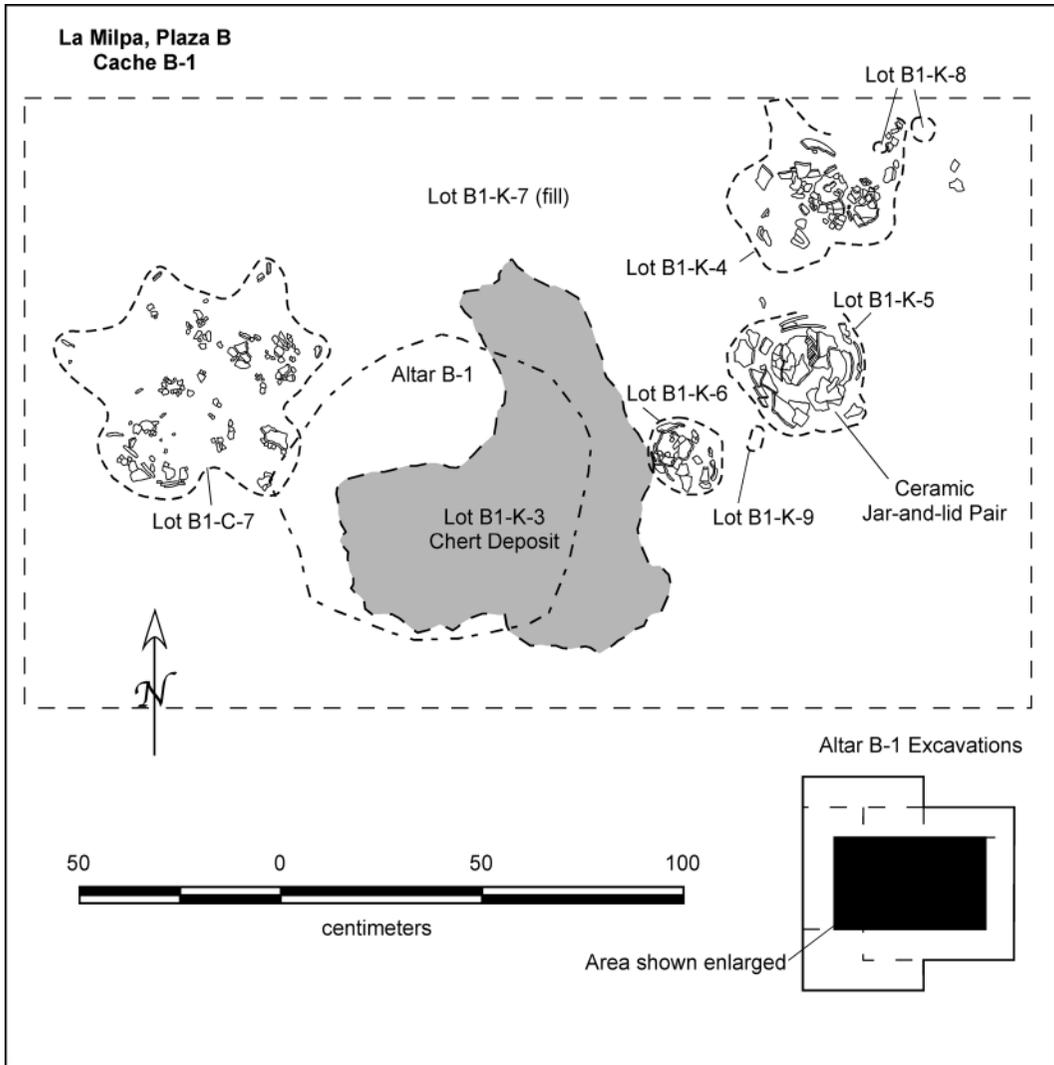


Figure 6. Simplified plan map of Cache B-1. Refer to Table 1 for artifacts associated with specific lots.

new excavation unit placed to the south of the original excavations recovered the remaining objects in Cache B-2. The deposit was encountered along the primary axis of the stairs to Structure 22, beneath the plaza floor and immediately east of the first step to the stairs. As was the case with the sub-altar cache, Cache B-2 was placed within the sub-floor fill of small cobbles; below and horizontally beyond the cache, the fill consisted of cobbles and small limestone boulders.

The northern portion of the cache consisted of a wide variety of artifacts clustered within a marly matrix of sediment and small cobble construction fill, while two ceramic jars with lids and a small

number of loose artifacts within fill comprised the southern portion (Figure 8; Table 2). It is possible that many of the artifacts outside of the ceramic vessels were originally contained within a perishable bag or basket. These include obsidian blades, marine shells and fragments, a long bone fragment, coral, one obsidian eccentric biface, one chert eccentric biface, two *Spondylus* shell pendant fragments, shell beads, jade beads, and fragments of small speleothems.

The two jar-and-lid pairs discovered in 2008 were highly fragmented, but it was possible to wrap them in plaster-of-Paris bandages in the field, remove them intact, and excavate them under more

Table 1. Contents of Cache B-1.

Lot	#	Artifact/Ecofact Type	Comments
B1-C-7	-	Ceramic sherds	Highly fragmented, not analyzed
B1-C-7	3	Shell fragments	
B1-K-3	1,938	Flakes	Chert
	2,904	Non-flake debitage	Chert
	5	Lithic tool fragments	
B1-K-4	1	Fish vertebra	Species undetermined
	1	Carbon speck	
	405	Ceramic sherds	Sherds from highly fragmented vessel, not reconstructed
	4	Greenstone fragments	
	1	Shell fragment	
B1-K-5	1	Coral	127.9 g, species undetermined
	2	Greenstone fragments	
	1	Burned seed	Species undetermined
	1	Shell fragment	
B1-K-6	1	Fish vertebra	Species undetermined
	1	Carbon speck	
	1	Ceramic vessel, fragmented	20.05 cm (Diam) by 0.80 cm (Th) by 15.65 cm (Height)
	1	Ceramic, incised lid, fragmented	21.73 cm (Diam) by 0.80 cm (Th) by 10.61 cm (Height)
	4	Greenstone beads	
	1	Shell fragment	Iridescent, from inside vessel
	1	Wood fragment	
B1-K-7	-	Burned clay	15.1 g
	2	Greenstone bead fragments	
	12	Shell fragments	
B1-K-8	1	Greenstone bead	
	3	Greenstone fragments	
B1-K-9	1	Obsidian blade	

controlled conditions in the field laboratory. Both pairs consisted of undecorated jars capped by incised lids, which were decorated with the same mat design found on the jar-and-lid pair from Cache B-1 (Figures 9 and 10). One jar contained an obsidian biface, one unworked greenstone fragment, 20 shell fragments, one fragment of coral, and two ceramic fragments, unrelated to the vessel or lid. The second jar contained two possible speleothem fragments, nine unworked greenstone fragments, 31 shell and shell fragments, and five ceramic fragments not related to the vessel or lid.

Chronology of the Caches

Excavation data suggest that the caches were placed in the plaza fill during the construction of the plaza and not during a later event, suggesting they were an integrated part of the Late/Terminal Classic plaza plan. Ceramic sherds from the surrounding fill place the plaza construction in the Tepeu 2-3 ceramic phase, dated in the region to ca. A.D. 700–850 (Sullivan and Valdez 2003). In addition, two radiocarbon dates from the caches

corroborate an eighth to ninth century A.D. (Late/Terminal Classic) date for the deposits (Table 3). In both cases, the radiocarbon dates are from samples collected in direct association with cache vessels, but not from within the vessels, which were all highly fragmented. Therefore, it is possible the samples represent charred material in the surrounding fill, but we consider this unlikely. Charred material is rarely recovered in Plaza B fill or collapse contexts, so it seems likely the material was part of the cache deposit itself. Regardless, because the caches appear to have been interred during the construction of the plaza, the dates would still be applicable to the caches even if the samples were from the fill.

Caches B-1 and B-2 as Ritually Engineered Deposits

The locations from which the two caches were recovered (beneath an altar and at the base of a building's stairs) are common locations for discovering caches at Lowland Maya sites. Such deposits are commonly referred to as dedicatory

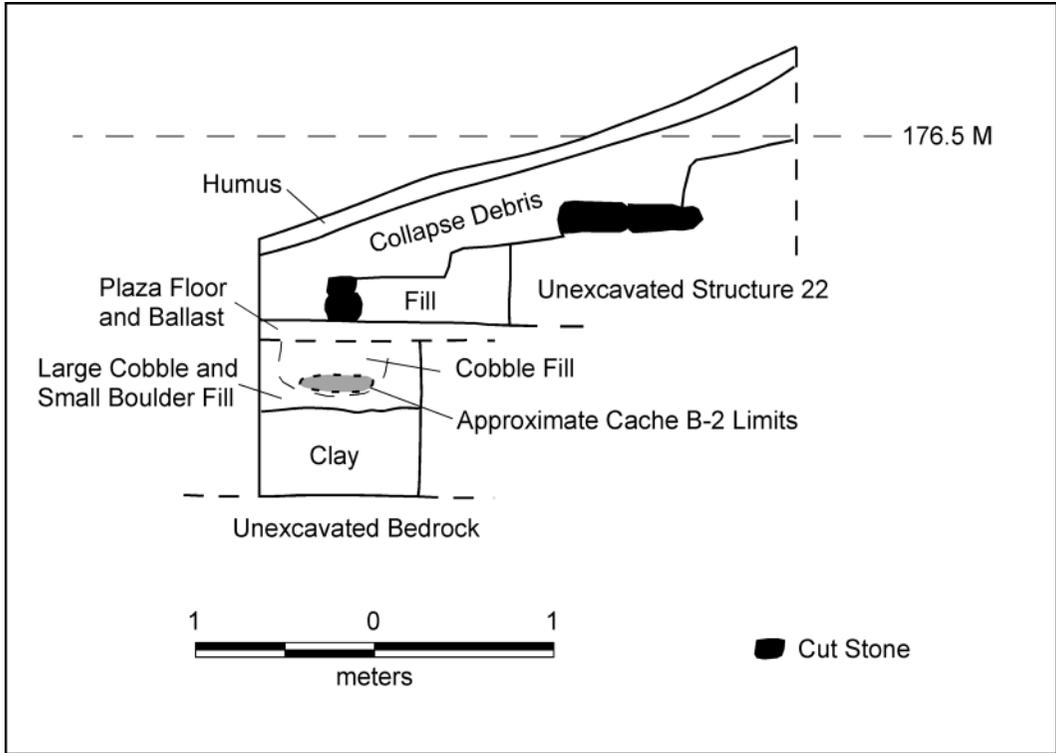


Figure 7. Simplified profile of Cache B-2 on southern wall of Subop B1-N.

caches and are believed to commemorate the monument or building with which they are associated. However, Maya caching behavior was probably more complex than an archaeological label like “dedicatory” would suggest (e.g., Chase and Chase 1998:303), and it is likely that caches and their associated rituals had multiple objectives (Coe 1990:930). Therefore, it is not unreasonable to view the two La Milpa caches as operating on more than one symbolic level—dedicatory and perhaps something more inclusive.

The three sets of jar-and-lid pairs are nearly identical (Figure 10), and may have been produced by the same craftsperson. They do not fit any previously described ceramic type at La Milpa (Kerry Sagebiel, personal communication 2008), but they are similar in form to Late Classic cache vessels and lids with appliqué faces from other sites in the region (e.g., King and Shaw 2003:72). While a red-slipped example from the small site of Bolsa Verde included “an etched mat design on the vessel lid” (King and Shaw 2003:72), the jar-and-lid pairs from Caches B-1 and B-2 are thus far unique in the Three Rivers Region. Although they differ slightly

in size, each vessel has a squared direct rim and is fitted with a matching flat lid. The paste of the vessels and lids varies in color from 5YR6/6 (reddish yellow) to 5YR5/8 (yellowish red) with fairly fine calcite inclusions. Both lids and vessels are slipped on the exterior with an eroding red (10R5/8) slip. Based on similarities in manufacture and décor, we suggest that the vessels were commissioned specifically for use in these two caches. Chronological and archaeological data support the conclusion that they were placed during the construction of the plaza, making it reasonable to suggest that both caches were placed at the same time.

While the two caches vary somewhat in terms of content, they both share the special jar-and-lid pairs decorated with an incised mat design. Variations of the mat design appear on portable objects, including jade pendants and pectorals (e.g., Bell et al. 2004:133; Robicsek 1975:318; Taube 2005:38, Figure 16), incised obsidian blades (e.g., Coe 2005:Figure 103), and ceramics (e.g., Coe 1973; Reents-Budet 2001); in graffiti (e.g., Haviland and Haviland 1995:301; Trik and Kampen 1983:Figure 38b); on altars and stelae (see Robicsek

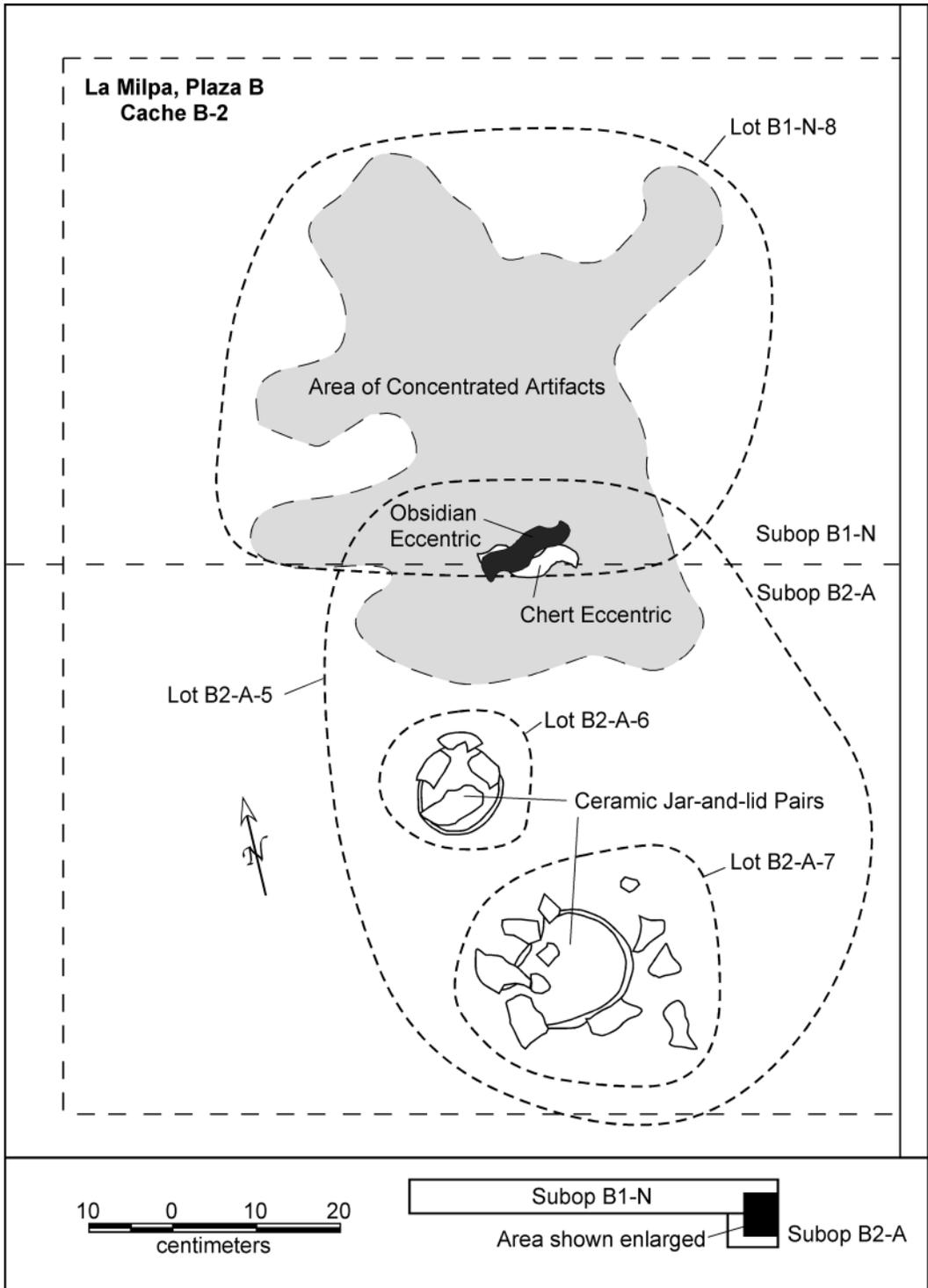


Figure 8. Simplified plan map of Cache B-2. Refer to Table 2 for artifacts associated with specific lots.

Table 2. Contents of Cache B-2.

Lot	#	Artifact/Ecofact Type	Comments
B1-N-8	7	Speleothem fragments	Ranging from .95 to 3.15 cm long
	2	Coral fragments	Species unknown
	3	Beads	Greenstone, .64–.88 cm in diameter
	2	Shell fragments, incised	Red/orange shell, possibly Spondylus
	1	Shell, cut	Pearlescent, possibly Mother-of-Pearl
	1	Shell pendant fragment	Possibly Spondylus
	3	Shell pendants	
	1	Shell bead	Orange, .65 cm in diameter
	1	Eccentric, obsidian	11.25 cm (L) by 2.9 cm (W) by 1.45 cm (Th)
	1	Eccentric, chert	11.82 cm (L) by 3.55 cm (W) by .85 cm (Th)
	9	Sherds, miscellaneous	
	2	Lithics	Flakes
	173	Shell and shell fragments	At least 10 species represented
B2-A-5	12	Beads	Greenstone
	1	Incised red shell pendant	Possibly Spondylus
	13	Ceramic fragments	Not associated with vessels or lids in Lots B2-A-6 or -7
	3	Lithics	1 chert fragment and 2 chert flakes
	1	Bone fragment	Long bone, probably non-human, possibly ulna. Broken and polished at distal end
	89	Shell and shell fragments	At least seven species represented
B2-A-6	1	Ceramic vessel, fragmented	12.21 cm (Diam) by .41 cm (Th) by 8.63 cm (Height)
	1	Ceramic, incised lid, fragmented	12.91 cm (Diam) by .5 cm (Th) by 5.12 cm (Height)
	1	Biface, obsidian	11.18 cm (L) by 3.63 cm (W) by 1.28 cm (Th), found inside vessel and lid pair
	1	Greenstone fragment	Un-worked, found inside vessel and lid pair
	20	Shell and shell fragments	Found inside vessel and lid pair
	7	Sherds	Not associated with vessel or lid, but found inside vessel and lid pair
	1	Coral fragment	Species undetermined, found inside vessel and lid pair
	-	Fragments of mother-of-pearl	Recovered in field during excavation of lot
	8	Sherds	Not associated with vessel or lid, recovered in field during excavation of lot
B2-A-7	2	Speleothem fragments	Found inside vessel and lid pair
	9	Greenstone fragments	
	31	Shell and shell fragments	Species undetermined
	5	Ceramic fragments	Not associated to vessel or lid, but found inside vessel and lid pair
	1	Ceramic vessel, fragmented	11.68 cm (Diam) by .65 cm (Th) by 8.77 cm (Height)
	1	Ceramic, incised lid, fragmented	12.61 cm (Diam) by .68 cm (Th) by 5.79 cm (Height)

1975:Appendix 5 for partial list); on benches (e.g., Valdés 2001:154); and on architecture (e.g., Chase and Chase 2001:114; Fash et al. 1992; Valdés 2001:143). In some cases, mat designs occur on ceramics as part of a scene taking place in a Maya palace, usually on depictions of structural piers (Reents-Budet 2001:205–206).

The mat design is an ancient stylistic motif argued to be emblematic of Maya kings dating as far back as the Middle Preclassic, and it is “one of the longest-enduring symbols of Maya kingship” (Sharer and Traxler 2006:218, 232, 273). As Robicsek (1975:17) notes, “the distinction of being seated on the mat in an official capacity, of being eligible

to wear the symbol, and to bear the title ‘Lord of the Mat’ was reserved to the highest ranking officials.” In this context, the ceramic lids with incised mat designs would therefore strongly suggest a connection to the ruling family at La Milpa.

Discussion

Caches are highly variable in context, content, and size, and are often complex ritual deposits full of apparent, but often unclear, symbolism. Given this complexity, it is not surprising that many cached deposits are interpreted as strictly dedicatory offerings to individual buildings and monuments with

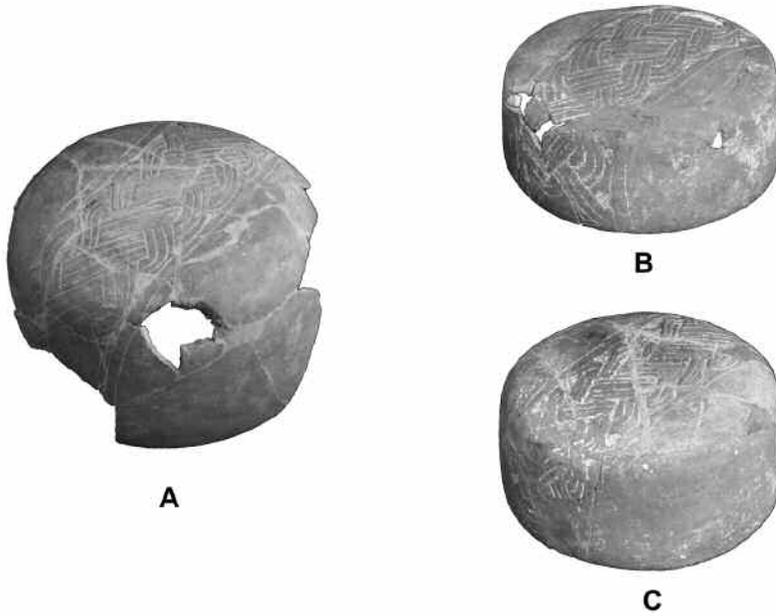


Figure 9. Photograph of mat design vessel lids from Caches B-1 and B-2, not to scale: (A) Cache B-1, Lot B1-K-6; vessel diameter is 20.05 cm; (B) Cache B-2, Lot B2-A-6; vessel diameter is 12.91 cm; (C) Cache B-2, Lot B2-A-7; vessel diameter is 12.61 cm.

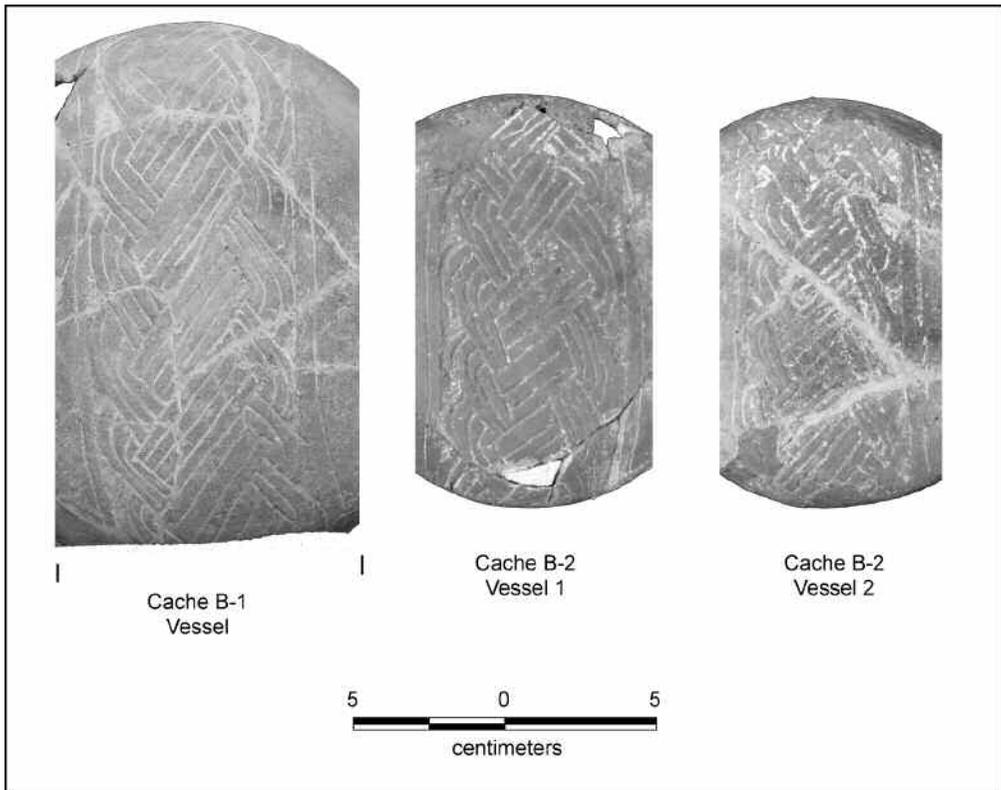


Figure 10. Photographs of mat designs for comparison of design details. Note, the entire diameter of Cache B-1's vessel is not shown.

Table 3. Results of Radiocarbon Sample Analysis from Caches B-1 and B-2.

Cache	Beta	Lot	Measured Radiocarbon Age	¹³ C/ ¹² C Ratio	Conventional Radiocarbon Age	2 Sigma Calibration
B-1	251676	B1-K-4	1160 ± 40 B.P.	-26.6 ‰	1130 ± 40 B.P.	Cal A.D. 780 to 1000
B-2	251675	B2-B-5	1240 ± 40 B.P.	-27.1 ‰	1210 ± 40 B.P.	Cal A.D. 690 to 900

which they are found. However, as Chase and Chase (1998:304) observe, “the contents and contexts of ritual offerings all combine to provide meaning.” We propose that in some cases the context of caches may include a larger architectural space than is commonly recognized archaeologically. In this sense, caches may exist as unique, dedicatory deposits while at the same time signaling a much larger, ritually engineered landscape that incorporates other caches and architectural features. As Chase and Chase (1998:326) note, “offerings are not merely activities undertaken secondarily to define physical constructions. Not only do ritual offerings help to define architectural space, but they may form critical components in the definition of territorywide sacred space and may be incorporated into buildings by design and before construction.”

The caches at Plaza B are important ritual elements that may have operated on multiple levels of symbolic communication. For example, the creation of each cache was an observed act, but the caches subsequently became “unseen” elements of the ritual urban landscape. The location of the caches was probably commemorated, however, and in one case may have been marked on the surface of the plaza at a later time by a stone monument. We believe the caches served to integrate the plaza horizontally, while the stone monument, Altar B-1, may have symbolically integrated the surface of the plaza—the functional space occupied by the Late/Terminal Classic Maya—vertically with the buried components of the ritual landscape. In doing so, this may have triggered memories of the rituals involved in the initial deposition of the caches (e.g., Leventhal 2009). This is perhaps a nontraditional view of the relationship between monument and cache, but, as part of a coherent plan of ritual elements, we propose that the connections go both ways: on one level, the cache serves to dedicate the altar while the altar also commemorates the cache. On a much broader

level, the demonstrated linkages between the caches point to an integrated, ritually engineered space of Plaza B.

Just as the crocodiles in the North Acropolis caches at Tikal indicate the otherwise discrete deposits are related to one another (e.g., Chase and Chase 1998:326), the unique mat-design lids in the two caches at La Milpa’s Plaza B signal the connection between the two deposits. Furthermore, the mat design communicates symbolic information of a political nature and suggests a royal connection to the construction of Plaza B and, by extension, to the planning involved in the construction.

Conclusions

Recently, the discussion of site planning in Maya archaeology has centered on whether or not Maya cities were built as symbolic cosmograms. We feel that the debate over the issue, while valid, has detracted from site-planning studies in general. Our discussion here is an attempt to return to a more encompassing definition of site planning, which can occur at a variety of scales and for a variety reasons. The argument presented here is in response to Ashmore’s and Sabloff’s (2002:211) call for archaeologists to look for evidence of urban planning in their research. Ashmore and Sabloff (2002:202) readily acknowledge that “many factors have affected the clarity with which...[ideational] foundations may be discerned today from archaeological site plans,” but they assert, “the central challenge is not whether political or cosmological symbolism might be expressed in architecture and space, but whether and how one can recognize when such symbolic communication has taken place” (Ashmore and Sabloff 2003:233).

We believe that our excavations at La Milpa have provided evidence for symbolic communication, planning, and ritual engineering in the construction of Plaza B. Despite their obvious differences and apparent associations with differ-

ent architectural features, Caches B-1 and B-2 are part of the same Late/Terminal Classic construction of Plaza B. In other words, the two caches, and by extension Altar B-1, which may have served to link the unseen ritual deposits to the functional plaza space used by the Late/Terminal Classic Maya, were part of the ritual engineering of the Late/Terminal Classic expansion of Plaza B. Along with civil engineering concerns (depth and type of fill, slope of the plaza surface, architectural stability, etc.), the architects of the Late/Terminal Classic expansion of Plaza B also took into account the location and placement of ritual deposits to integrate the physical space of Plaza B on a symbolic level. Furthermore, the mat design found on three ceramic lids suggests royal sponsorship of the plaza plan, or at least royal participation in the rituals surrounding the creation or dedication of the caches.

Obviously, the caches and their diverse contents carry much symbolic meaning beyond the political statement, most of which has become lost or unclear. However, for the purposes of this study, the symbolic meaning of the caches is not the issue. Rather, the important point is that we are able to recognize that communication related to political and cosmological symbolism has occurred (e.g., Ashmore and Sabloff 2003). Furthermore, this symbolic communication was a deliberately engineered component of the royal precinct plan at La Milpa during its Late/Terminal Classic phase.

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Notes

1. This clayey soil is presumably a buried paleosol or material dredged out of Reservoir B, which may have started as a natural aguada (Sagebiel 2005; Scarborough 1999). Because the clay layer is found consistently across Plaza B and not just near Reservoir B, we suspect it is an in situ soil, which would mean it was the constructional surface upon which Plaza B was built.

2. We are using the term “royal precinct” to refer to the southern plazas and Southern Acropolis at La Milpa based on the presence of throne-like benches excavated by LaMAP in the Acropolis (Hammond et al. 2000) and our own data presented here. We are appropriating the term royal precinct planning from Ashmore and Sabloff (2003:232).

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